# Future priorities, research needs and actions 6

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Courtesy G Williamson

## 6.1 Introduction

Until the mid-1900s, biodiversity was largely the concern of museum and herbarium taxonomists who described different organisms and their relationship to each other. This work was far removed from the lives of ordinary people, and was very much an isolated specialisation of individuals and institutions who had a passion for discovering, describing and curating new and little-known plants and animals.

At about the middle of this century, biologists began to take a broader approach to conservation. In the past, protected areas were identified mainly on the presence of game animals (generally large mammals) which were threatened by overhunting and were monitored by 'wildlife biologists.' A new generation of 'conservation biologists' then began to look at the ecological roles and conservation status of a range of different groups, including birds, lower vertebrates, insects and plants. Species in different taxa became the units of measurement for conservation management, conservation prioritisation (*e.g.* red data books), and conservation action. Interested members of the public became more aware of rare and endangered plants, birds, fish, and insects, of high profile 'flagship' species such as rhinos and cranes, and of habitats under pressure such as wetlands.

During the last decade of this century a further shift in biodiversity thinking has taken place. We now realise that the diversity of life on earth constitutes the essential elements which underpin human survival on this planet -- the food we eat, the natural resources we use for medicines, housing, clothing and energy, the natural resources on which our economies are based, and the species which support ecological life-support processes such as water purification, oxygen production, soil generation and biological decay and nutrient cycling. These resources and processes support human life and human livelihoods, and their depletion or disruption therefore has severe and direct social, economic, and political consequences.

The emphasis of biological diversity has thus evolved from purely taxonomy to conservation management focused on game mammals, to conservation biology analyses of the viability and protection of many taxa, to our belated realisation that biological diversity is central to virtually all interactions of people and their environment. In short, there is now a clear understanding that the wise management of biodiversity and the sustainable development of people are inextricably linked.

This realisation has only recently dawned in Namibia. At least in key circles, government and non-government planners understand that actions need to be taken, awareness must be raised among decisionmakers and

the public, and key institutions need to act, often in new and innovative ways. However, this is not to say that in Namibia matters are in hand, that appropriate actions are taking place and that things are uniformly moving in the right direction. The preceding chapters have highlighted a large number of gaps in information and action. They have highlighted the past lack of coordination and cooperation between different institutions responsible for biodiversity conservation, the removal of data and specimens by some foreign researchers, the potential damage done by inappropriate incentives, policies, and legislation, and indeed the many lost opportunities for sustainable development and environmental protection.

However, more important than this, the preceding chapters tell us that Namibia has

(a) a good -- though far from complete -- body of information on which to work,

(b) a small -- though far too small -- body of dedicated and experienced biodiversity scientists who wish to work cooperatively, complemented by a network of scientists from abroad,

(c) a number of well placed -- though often understaffed and underfunded -- institutions which are starting to understand the synergistic value of collaboration,

(d) a protected area network covering 13.8% of the country's land surface -- though with important gaps,

(e) a clearly identified range of issues to address as we move into the 21st century with biodiversity conservation high on our list of useful tools to direct human development in a sustainable way, and

(f) a National Biodiversity Task Force, experienced in working together, to direct and guide this process.

## 6.2 Research priorities

The following research priorities have been identified from the preceding chapters.

1. To *improve our information base* for:

- the *current conservation status of habitats and biomes* in Namibia, improving upon classifications, descriptions, and accuracy of mapped units;

- the *taxonomy, ecology and biogeography of little known groups* such as viruses, fungi (especially mycorrhizae), algae, soil bacteria, nematodes, aquatic invertebrates, most arthropods, lower plants, and lower vertebrates, especially where these aid our understanding of the protection of biodiversity and ecological processes.

  Assessments must be carried out of the minimum levels of information needed to conserve different taxa effectively and make informed planning and management decisions, taking into account time and financial constraints. Patterns emerging from the little known taxa may be similar to those of better known and more easily monitored groups. A major gap needing urgent research attention is how these lesser known groups support essential ecological processes, particularly in wetlands, the ocean, and the savannas which support agriculture in Namibia.

- *little-known biomes, habitats and features of ecological importance* such as the escarpment and inselbergs, and inland wetlands, wherever possible using teams from different disciplines and agencies to stimulate debate, uncover novel scientific paradigms and biogeographic processes, explore options for future research and management, and raise awareness.

2. To use the best available biodiversity data to *analyse the effectiveness of the protected area network and other land use types* in protecting biodiversity, Namibian and regional endemics, red data species and our archaeological