New information on the lowland coastal forests of eastern Africa

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Coastal Forests in Eastern Africa

Burgess and Clarke (2000) presented a compilation of the available information on the coastal lowland forests of eastern Africa, a region acknowledged to be amongst the most important areas for biodiversity conservation globally (Stattersfield *et al.* 1998; Mittermeier *et al.* 1998; Olson and Dinerstein 1998). However, much of the information contained in that compilation was gathered in the early 1990s, and hence is now somewhat outdated.

Over the past couple of years a programme coordinated from the WWF office in Nairobi (www.worldwildlife.org/ecoregions) brought together representatives from the three countries supporting large areas of these habitats, Kenya, Tanzania, Mozambique and developed a common vision on the way forward with conservation in this region. It also formed national task forces that have now met and engaged a coastal forest ecoregion coordinator, which gives a good regional base for developing an ecoregion-wide approach to the conservation of these forests. This WWF facilitated work, complemented by recent research funded through the Critical Ecoregion Partnership Fund (www.cepf.net) has demonstrated changes in the status of the habitats and the biodiversity importance of these forests (Younge *et al*. 2002; WWF-EARPO 2002; Nature Kenya and WCST 2003; Gordon *et al.* 2003). We provide a brief update on the status and biodiversity values of the eastern African coastal forests and outline that considerable areas of forest habitat exist in northern Mozambique, which should be investigated by biologists to determine their importance for conservation.

The habitats of coastal eastern Africa

The coastal strip of eastern Africa supports a mosaic of different vegetation types. Much of the area supports bushland/thicket habitats and coastal variants of savanna woodland habitats. There are also smaller areas of wetland, and patches of lowland forest. The total area of land covered by this mosaic of habitats is around 260,000 km^2. These habitats have been variously classified as the Zanzibar Inhambane regional mosaic (White 1983), the Swahilian center of endemism and Swahilian transition zone (Clarke 1998) or the northern and southern Zanzibar-Inhambane forest mosaic ecoregion (Olson *et al*. 2001).

The lowland forests have received the greatest biological study as they contain numerous endemic species within a small total area. Data gathered over the past year has revealed the existence of 154 forest patches covering approximately 3107 km^2 that were not included in Burgess and Clarke (2000). The forest extends over 2 km^2 of Somalia, 787 km^2 of Kenya (estimated as 660 km^2 in 1992), 692 km^2 of Tanzania (estimated as 700 km^2 in 1992), and 4778 km^2 in Mozambique (estimated as 1790 km^2 in 1992). By far the largest increase in recorded forest area is in Mozambique. The increased forest area figure for Kenya due to increased survey work. Indeed there is no evidence to suggest that these forests have regenerated between 1992 and 2002. On the contrary reports and site visited from Kenya and Tanzania suggest a declining forest area with the most dramatic forest losses occurring close to the major cities. For example outside of Dar es Salaam the Pugu / Kazimzumbwi, Ruvu South and Masanganya Forests Reserves are all facing extensive forest loss. The situation is different in northern of Mozambique where large and apparently unthreatened expanses of forest habitat, grading into bushland and woodland, remain (Burgess et al. 2003).

Most of the larger coastal forest fragments in Kenya and Tanzania are found within government Forest Reserves, although there are numerous small patches in 'sacred groves' and some areas on private lands – for example in some sisal estates. One important coastal forest in Tanzania (Zaraninge) is also in the process of being included within an expanded Sadaani Game Reserve, which will become a new National Park. In Mozambique there are large areas of forest remaining on village and 'empty' lands, several hundred square kilometers of which has recently been included within the new Quirimbas National Park (declared June 2002) (Burgess et al. 2003).

The biodiversity importance of coastal forests

The eastern African coastal forest mosaic contains around 1750 strictly endemic species. The lowland forest habitat is the most biologically valuable and contains 554 endemic species of plant and 52 endemic species of vertebrate animals. The surrounding non-forested vegetation of the coastal strip of eastern Africa is also important, containing at least 812 strictly endemic plants and 47 endemic vertebrates (see www.worldwildlife.org/ecoregions). Although there are more endemic species in the non-forest vegetation types, these habitats cover at least 255,000 km^2 of land (0.3 endemics per 100 km^2 of habitat), whereas the coastal forests cover a total of 6,259 km^2 (9.6 endemics per 100 km^2 of habitat). Clearly it is the forest patches that have the highest biodiversity importance per unit area.

Many of the endemic species have tiny geographical ranges, with single site endemism being commonplace. As a consequence of these small ranges and the restricted and declining area of coastal forests where many endemics are found, a large number of species are threatened with extinction in the coastal forests (www.biodiversityscience.org).

New species of animals and plants continue to be discovered in the coastal forests. During the past 10 years, 4 new species of mammals, two new species of reptile and a new species of amphibian have been named. Almost all the new species have been found within forest habitats within the region. Of particular interest are the new species of mammals. One of these involves the upgrading of the Zanzibar red colobus to a full species (*Procolobus kirkii*) (Grubb *et al*, in press). The other three are galagos, or bushbabies. Detailed field studies using vocalizations and penile morphology (Bearder *et* al, 1995; Bearder, 1999) have revealed the new species *Galagoides rondoensis* (Honess and Bearder, 1996; Honess in Kingdon, 1997; Grubb *et al*, in press) in the coastal forests of southern Tanzania. *Galagoides* cf. *cocos*, has been provisionally split from *Galagoides zanzibaricus* pending a full description (Perkin and Bearder, in prep) and occurs in the coastal forests of NE Tanzania, Kenya and probably SE Somalia (Grubb *et al*, in press). *Galagoides granti* was also split from *Galagoides zanzibaricus* (Grubb *et al*, in press). Recently a new sub-species of servaline genet *Genetta servalina archeri* was described (Van Rompaey & Colyn, 1998), the first record of this species in the coastal forests. Clearly there is much still to learn about these forests. In particular the forests of northern Mozambique remain unknown biologically and may well support new species in all taxonomic groups.

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