Blue duiker *Philantomba monticola* densities in the Tsitsikamma National Park and probable factors limiting these populations

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Numbers of blue duikers recorded on 157 and 28 variable width transect counts, done over a two year period in the Tsitsikamma Coastal National Park (TCNP) and Tsitsikamma Forest National Park (TFNP) respectively, did not differ significantly ($P > 0.10$) with seasons (summer v. winter). Population density estimates from transects were similar to those from game drives ($0.18$ v. $0.19$ duikers/ha (TCNP) and $0.13$ v. $0.17$ duikers/ha (TFNP); $P > 0.10$), higher than from faecal pellet counts ($P < 0.10$) and at least three times lower than estimates from the Kenneth Stainbank Nature Reserve and Umdoni Park in Natal. Factors contributing to the low population densities in the Tsitsikamma national parks were investigated. Twenty-seven and seven percent of leopard (25) and caracal (12) scats respectively analyzed contained blue duiker remains, but predator numbers appear to be low. Forest characteristics were investigated, and results from this and other studies suggest that undergrowth cover does not markedly influence blue duiker densities in the southern Cape forests. Field and stomach analysis indicate that blue duikers feed primarily on freshly fallen leaves and fruit, and are selective foragers. In the Tsitsikamma national parks (TNPs) the frequency of occurrence of trees known to be palatable to duikers are low, while less than 45 percent of the dominant tree species fruit fully annually. This apparent scarcity of food, the low numbers of antelope species and individuals in these forests and results from duiker research in Zaire, suggest that habitat rather than predation is limiting duiker numbers in the Tsitsikamma national parks.

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**Introduction**

Blue duikers, *Philantomba monticola* (Thunberg, 1789), are rare in South Africa (Smithers 1986) and confined to forests and thickets, primarily in the coastal strip extending from the Umfolozi River system in Natal to George in the southern Cape (Smithers 1983; Wilson 1987). They are recorded from only two South African national parks, Zuurberg and Tsitsikamma, but are found in several nature reserves in Natal (Bourquin *et al.* 1971; Bowland 1990a) and unprotected areas throughout their distribution (Bowland *pers. comm.*).

In the southern Cape numbers of blue duikers apparently decreased in the late 1940s and early 1950s and remained depressed throughout the 1950s and 1960s, but have subsequently increased in the Tsitsikamma Coastal National Park (TCNP) (Crawford & Robinson 1984). This decrease in duiker numbers and the slow recovery of the populations were respectively attributed to an increased abundance of caracal (*Felis caracal* Schreber, 1776) in the forests during (the drought of) the late 1940s (Thesen *in litt.* 1952 in Skaed 1980; Liversidge 1966) and subsequent hunting by dogs and poachers (Liversidge 1966; Crawford & Robinson 1984). This study compares blue duiker densities in the Tsitsikamma Coastal and Forest National Parks (TNPs) with those from other regions (Von Gadow 1978; Koster & Hart 1988; Bowland 1990a) and discusses the probable effect of predation and habitat on the populations of the southern Cape. It complements the work of Crawford (1984) and Bowland (1990a, 1990b) on blue duiker in the TCNP and Natal respectively and forms part of a Pan-African decade of duiker research (Wilson 1987).

**Study area**

The terrestrial section (ca. 70 km x 0.8 km) of the Tsitsikamma Coastal National Park...