

A riverside count in Africa's Selous Game Reserve

Michael P. Ghiglieri

The Selous contains a wealth of animals but monitoring the populations is difficult because motorable tracks are few and aerial surveys are expensive. The author gained access to the heart of the reserve along its rivers and during a 12-day raft journey he recorded the large animals he saw. He was impressed by the pristine condition of the riverside habitat and he found no evidence of poaching there.

The Selous Game Reserve in Tanzania is the largest single protected ecological unit in Africa. Covering 35,000 sq km, it abounds with the large mammals typical of brachystegia (miombo) woodland. But its size, coupled with the disappearance of many of the motorable tracks, has made it impractical to monitor its wildlife populations except by aerial censuses, which may be prohibitively expensive. Brief censuses in recent years have indicated a fantastic wealth of large mammals; for example, 100,000 elephant *Loxodonta africana* (Douglas Hamilton, pers.

comm.) and several thousand black rhino *Diceros bicornis* (Stevenson, pers. comm.)—more than 10 per cent of the entire populations of both species in Africa. In view of the alarming decline of these two species across Africa the Selous is patently the most important intact reserve on the continent.

The Kilombero and Rufigi Rivers flow north-west through the Selous, but travel along this waterway is hindered by the Shiguri Falls, a 5-km stretch of unnavigable water above the confluence of the Kilombero and Luwego Rivers. Between 27 January and 7 February 1981 I took part in a rafting expedition, organised by Sobek Expeditions Inc., along the Kilombero and Rufigi from Ifakara (starting on the Memo River) to Lake Tagalala, approximately 250 km downstream. These waterways cut through the heart of the Selous. I recorded all sightings of large mammals

Table. Counts of large animals in the Selous, along the Kilombero and Rufigi Rivers, between 27 January and 7 February 1981.

Species	Total individuals seen along 246.4 km river
Savanna baboon <i>Papio cynocephalus</i>	3 groups 2 solitary
Sykes monkey <i>Cercopithecus mitis</i>	1 group
Vervet monkey <i>Cercopithecus aethiops</i>	2 groups
Cape clawless otter <i>Aonyx capensis</i>	4
Lion <i>Panthera leo</i>	1
Elephant <i>Loxodonta africana</i>	27
Hippopotamus <i>Hippopotamus amphibius</i>	3623
Warthog <i>Phacochoerus athiopicus</i>	1
Bushpig <i>Potamochoerus porcus</i>	2
Livingstone's eland <i>Taurotragus oryx</i>	1
Bushbuck <i>Tragelaphus scriptus</i>	1
Common waterbuck <i>Kobus ellipsiprymnus</i>	64
Bohor reedbuck <i>Redunca redunca</i>	14
Lichtenstein's hartebeest <i>Alcelaphus lichtensteini</i>	4
Brindled wildebeest <i>Connochaetes taurinus</i>	2
Impala <i>Aepyceros melampus</i>	34
African buffalo <i>Syncerus caffer</i>	16
African fish eagle <i>Haliaeetus vocifer</i>	56
Crocodile <i>Crocodylus niloticus</i>	148

Africa's Selous game reserve

both in the river and within approximately 50 m of the shore. On some sections vegetation obscured the view, and where occasional sections of river were up to 1000 m wide animals on the far shore were difficult to spot even with 10 × 40 binoculars, so some were probably missed. Because of this and the statistical unreliability of a single count, I did not attempt to generate density figures from the data. The count, however, provides an indicator of species presence and relative abundance with the immediate riverine habitat, and the data may be useful for comparison with future similar counts.

The use of a river as a sample strip for a count is tricky to analyse because none of the mammals counted (except perhaps cape clawless otters *Aonyx capensis*) find all their requirements within it. The count was made during the short rains, when surface water was probably available far from the river, so there were no riverside concentrations of ungulates in search of water. With the exception of the hippopotamus *Hippopotamus amphibius*, for whom the river is a physiological refuge, and cape clawless otters, the mammals counted were 'visitors' rather than obligate residents of the habitat.

The typical ungulate of brachystegia woodland most frequently seen was common water-buck *Kobus ellipsiprymnus*. Their prevalence may be due to their need for water being greater than that of other antelope species counted (Taylor, 1968). No antelopes or primates were particularly common near the river, although short walks along game trails through the woodland revealed greater (but unquantified) numbers of all ungulates and primates listed in the table, plus zebra *Equus burchelli* and more elephant. Similarly, predators, including lion *Panthera leo*, leopard *P. pardus* and spotted hyena *Crocuta crocuta* were seen and heard more often during walks or in camp than during travel on the river.

Hippopotami are typical of African rivers. The combination of good grazing and the refuge provided by the two wide rivers seemed ideal for them. The only area where I have seen a greater density of hippo was in the Kazinga Channel and the Mweya Peninsula region of Rwenzori National Park in Uganda before the 1979 war of liberation. The Selous population during the present count contained a great preponderance of adult-sized individuals (unfortunately, I did not quantify age or size classes) that contrasts strikingly with the present population of hippo in Rwenzori Park in post-liberation Uganda.

Oryx Vol 17 No 1

Although, within two years of liberation, there were at least 4000 hippo within Rwenzori in January 1981 (Malpas, pers. comm.), more than half were obviously immature, the result of a great reproductive surge following wholesale slaughter by soldiers during liberation (Van Orsdol, 1979). In comparison, the Selous population was dense (3621 counted) and mature. The Selous hippo seemed curious and relatively unafraid, quite unlike hippo under hunting pressure (Ghiglieri, 1981), and I doubt if they were being hunted at all within the reserve. The number sighted along the first 35 km downstream of Kibukoni Ferry, outside the western boundary of the Selous, was about 10 per cent of that seen during the next 35 km. The habitat appeared equally suitable in both stretches but fishermen were frequent in the upstream section and rare in the downstream stretch.

The relatively common African fish eagle occurred fairly regularly along the river where trees provided perches. Crocodiles increased in density with increasing distance from human habitation and were most numerous in the region immediately downstream of Shiguri Falls, possibly due to the greater availability of stunned fish in those waters. It seemed that a smaller proportion were more than 3 m long than was the case along the Nile downstream of Kabalega Falls in Uganda (pers. obs.) or along the Omo River of Ethiopia in 1977 (Ghiglieri, 1981). This size-age structure of the Selous population was the reverse of that of the Selous hippo. Selous crocodiles were apparently more intensely hunted in the recent past than Kabalega or Omo populations before 1977.

My general impression of the river corridor habitat within the boundaries of the Selous Game Reserve was that it was in a pristine state, unmodified by human activities, and a true sanctuary unviolated by poaching. There were no signs of human passage, no old cooking fires, no camp structures, no mammal bones nicked by panga, and no snare wires.

References

- Ghiglieri, M.P. 1981. A count of large mammals on the Omo River Canyon of southern Ethiopia. *Oryx* **16** (2), 142–143.
- Taylor, C.R. 1968. The minimum water requirements of some East African bovines. *Symp. zool. Soc. Lond.* **21**, 195–206.
- Van Orsdol, K.G. 1979. Slaughter of the innocents. *Anim. Kingd.* **82**, 19–26.

Michael P. Ghiglieri, PO Box 1976, Zephyr Cove, Nevada 89449, USA.