Wilderness in the Ruaha National Park, Tanzania

BY MGG MTAHIKO

The Ruaha National Park is in southern Tanzania, an area relatively free from tourism impacts and still exceptionally wild. Its greater ecosystem is approximately 45,000 square kilometers (17,374 sq. mi.), consisting of the park itself (10,200 sq. km [3,938 sq. mi.]) and surrounding game reserves that are used mainly for sport hunting.

The Tanzanian National Parks Authority (TANAPA) manages the Ruaha National Park, and is a trusteeship under the Ministry of Natural Resources and Tourism. Much of its funding is derived from tourism revenues earned from visits to the better-known parks in north Tanzania, such as Serengeti. These revenues are shared by all of Tanzania's national parks. Revenues earned from hunting in game reserves contribute to management of those huge buffer zones around the parks.

TANAPA evaluates the potential for wilderness designation in all national parks. When wilderness is designated and approved by the park's Game Management Plan/Environmental Impact Assessment (GMP/EIA), TANAPA then manages wilderness zones for use that leaves them unimpaired for future generations. For example, wilderness-oriented tour operators that provide opportunities for remote hiking experiences may be authorized to use wilderness areas if they meet the provisions of the TANAPA national policy, comply with the zoning regulations and limits of acceptable use stipulations detailed in the park's GMP/EIA, and comply with all TANAPA regulations and permits.

The Wilderness Zone in Ruaha National Park comprises 6,022 square kilometers (3,733 sq. mi.). Within this area lies a seldom-visited and remote wilderness core known as the Sunguviula Plateau. Recently, the WILD Foundation provided funding with the Sierra Club to support the preparation of a wilderness management plan for the Sunguviula area.

TANAPA History

Protected areas were first gazetted during the colonial era. Following independence in 1961, more conservation areas were gazetted in different categories: national parks (4% of total land area in the country) where no human habitation (except for park and tourism investment staff) and hunting is allowed by law; game reserves (10% of total land area) where tourist hunting is allowed; game controlled areas where residential hunting is allowed; forest reserves (15% of total land area) for conservation of forests; and conservation areas where human habitation and wildlife coexist. Currently TANAPA manages core-protected areas that cover 4% of the country's total land area, in 12 national parks, that form the major samples of different biomes and ecological systems.

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To ensure an appropriate balance between preservation and use of resources, TANAPA developed a strategic planning process to prepare general management and zone plans for national parks. TANAPA is mandated to

> manage and regulate the use of areas designated as national parks by such means and measures to preserve the country's heritage, encompassing natural and cultural resources, both tangible and intangible resource values, including the fauna and flora, wildlife habitat, natural processes, wilderness quality, and scenery therein. The park resources should provide for human benefit and enjoyment of the same in such manner and by such means as will leave them unimpaired for future generations.

Park ecologist, Gladys Ng'umbi, identifies new plant.

Primary objectives/purposes of national parks are to preserve

- areas possessing exceptional values that illustrate the natural or cultural resources of the country;
- areas that offer superlative opportunities for public benefit, enjoyment, or scientific studies;
- areas with outstanding examples of a particular type of resource; and
- water and soil resources critical to maintain ecological integrity and that support the subsistence needs of people outside park boundaries.

And to ensure that

- parks retain a high degree of integrity as true, accurate, and unspoiled examples of a resource;
- management plans for parks are developed by interdisciplinary teams composed of appropriate professionals with the best available information to achieve a balance between preservation and use that does not adversely impact park resources and values;
- a quality visitor experience rather than mass tourism at the expense of park values and resources; and
- optimum levels of revenue and benefits accrue to the national economy, the parks, and communities, without impairing park resources.

History of Ruaha National Park

The area was first recognized as part of the Saba River Game Reserve in 1910, which was regazetted as the Rungwa Game Reserve in 1946. In 1964, the southern portion of this reserve was declared the Ruaha National Park, and in 1974 a smaller section to southeast of the Great Ruaha River was added to complete the boundaries that exist today.

Development of infrastructure has been largely restricted to the eastern-central portion of the park in the Rift Valley bordering the Great Ruaha River.

The first commercial tourism interest in the park was the construction of the Ruaha River Camp (now Lodge) by Foxtreks Ltd. at Mwayangi in 1981. Three more tented camps are operating now: Mwagusi Safari Camp, Jongomero Tented Camp, and Mdonya River Camp. All camps operate within current policy for the preservation and management of wilderness in Tanzania's national parks. Visitors' surveys in 1993/1994 indicated that the park's wilderness character was far and away the most appreciated of its qualities, and the vast majority of visitors pleaded against development that would destroy this. Tourism has increased yearly, and during July 2002 to June 2003 included 7,654 visitors.

The Ruaha National Park realizes only about 30% of its annual budget from revenues that have been collected from visitors to the park itself. All the parks in Tanzania are regarded equally since they are all dealing with TANAPA's main goal of conservation. The revenue collected is shared with all the parks and the head office administration for recurrent expenditures, with some set aside for development programs and government tax. Since wilderness is a zone within the park, it is funded in that context and not regarded separately.

The original Management Zone Plan (1994) described eight zones within Ruaha National Park: Wilderness Zone, Semi-Wilderness Zone, Conservation General Use North Zone, Conservation General Use South Zone, Core Preservation Zone, Conservation Limited Use Zone, Transit Road Zone, and Park Administration Zone.

The 12 park management objectives are to

- protect and maintain the park's exceptional resources, including its wilderness character, as well as its full range of landforms, habitats, and biodiversity;
- ensure that park management is in harmony with the conservation requirements of the entire Ruaha—Rungwa—Kizigo—Muhesi ecosystem;
- introduce better control over fire, the use of natural resources, and the occurrence of exotic species in the park;
- develop and promote a range of low volume, low impact but high quality, high return, visitor recreation and tourism investment opportunities, including wilderness walking, within stated limits of acceptable use;
- provide education and appropriate infrastructure for administration and tourism, subject to the assessment and monitoring of their environmental impact both pre- and post-construction;
- develop interpretation facilities and services for better visitor appreciation of the park's resources;
- establish an ecological research and monitoring program to provide baseline resource information, and monitor rates and degree of change in relation to acceptable limits;
- ensure that local communities share in benefits accruing from the park and encourage local inhabitants to

become involved in sustainable natural resources management;
- identify and protect significant historical or contemporary sites of cultural significance, and allow access to appropriate social groups;
- raise conservation awareness among local communities through a targeted education program;
- preserve the park's water catchment areas and hydrological functions, particularly in respect to the Great Ruaha and Mzombe Rivers; and
- balance the park's budget primarily by increasing revenue from tourism.

Unlike South Africa and other countries where "wilderness" is a legally recognized designation, in Tanzania the term refers to a form of resources management in a zone within a core protected area. This is by far the largest zone and comprises most of the park above the Ruaha escarpment (6,022 sq. km [3,733 sq. mi.]; 59% of the area). It is an area stretching approximately 170 kilometers (105 mi.) between the park's northeastern and southwestern extremities, with a variable width of up to 60 kilometers (37 mi.) and bounded to the north by the southern edge of the Semi-Wilderness Zone. For descriptive purposes, it is subdivided into three sections.

The section to the east of the Msembe—Mpululu Road is fairly flat country with relatively few small, mainly granite hills. This area is covered by a mosaic of mainly *Combretum-Commiphora* dominated mixed woodland and shrub. Few major drainage lines occur and no significant permanent water sources exist. Acacia species are more common along drainage lines. Some more open areas do occur on very shallow stony soils, but these contain sparse shrubs, and the only real grasslands are limited to a few fairly narrow areas that become waterlogged in the rainy season. Rainfall averages 400 to 500 millimeters (16–20 in.) increasing to the west.

The central section, a large wedge of slightly higher land, is separated from the previous section by the Msembe—Mpululu Road. It is less flat, but still with few significant hills. The vegetation is classified mainly as *Miombo* transition with increasingly typical *Brachystegia* woodland occurring at higher altitudes and toward the west. Drainage lines are more prominent, together with their accompanying vegetation of Acacia woodland on the fringes and fairly narrow, coarse grass centrally.

The southwestern section is varied terrain and contains several high ridges of mountains culminating in the Insunkavyola plateau on the park's western boundary. This high ground is interspersed with wide valleys. The vegetation is dominated throughout by *Miombo* woodland. There are many rivers and streams, and many of the wetlands are semi-permanently waterlogged. Water is freely available to wildlife all year round. Annual rainfall averages 500 to 800 millimeters (20–32 in.), increasing from east to west and with increasing altitude.

Issues and Challenges

The main management problems and concerns that the GMP has sought to address are

- Biodiversity—There is a scarcity of dry season surface water sources because most rivers are sand rivers, only flow on the surface during the rain season (mid December through mid May) and cease flowing on the surface during dry season. Controlled use of surface water will maintain the flow, which is important for existing biodiversity.
- Endangered species—The park is endowed with different species of flora and fauna, some of which are classified by IUCN as endangered (African hunting dog), endemic, threatened (e.g., cheetah, leopard, elephant, etc.), and rare. These require sound management initiatives for their survival. The core preservation zone is set to secure sensitive and fragile parts of the along the Great Ruaha river.
- Wildlife behavior—It is necessary to ensure naturalness of the park through proper use of designated facilities so as to protect the animals from continuous disturbance in their habitats.
- Vegetation and soils—The park aims to control usage of surface water to sustain vegetation and maintain natural processes.
- Water resources—Continuous surface and subsurface water recharge flows are critically important in ecological processes that require constant availability.
- Visitor experience/limits of acceptable use—Visitor use limits are set to ensure minimal impact of human activities to the park resources for optimal visitor experience.
- Cultural and scenic resources—The resources will have adequate protection for continued usage by the neighboring communities and tourists.
- Neighboring communities—The park has negligible/low impact on

Environmental education introduced into community schools.

quantity and quality of the water that runs through it, and it is the obligation of the park to ensure that this is continued for use of the downstream users.

- Park operations—Maintain signs on all park boundary lines for ease of recognition by the communities and other stakeholders.
- Revenue and tourism—Develop game-viewing facilities for game drives, and provide optimum enjoyment and benefit without impairing resources and proper administration of revenue collection.
- The Great Ruaha and Mzombe Rivers—These two river systems partly form the boundary of the park. The Great Ruaha River forms the main water source for animals during the dry season (July through December). The river ceases to flow during the dry season due to various uncontrolled human activities farther upstream of the park boundary.
- Unique interface on miombo and east african *Acacia/Commiphora* communities and riverine communities—this is a unique interface of vegetation communities in the park and needs protection and prevention of introduction of species that are not common to the ecosystem.
- Significant wildlife resources—Elephants, sables, roan antelopes, and greater and lesser kudu are important wildlife species. Their abundance and unique coincidence in Ruaha is one of the park's major attractions. The park shall ensure protection of all wildlife in and around the park.

Local Community Involvement

The declaration process of a national park starts with the local communities in the adjacent areas of the intended protected area. The communities are given opportunity to give their opinion, starting with the local villages and continuing to the district and regional levels. During these stages, all matters forwarded by the communities are discussed and sorted out jointly between the government and communities. Having been agreed to by all concerned parties, the matter is forwarded to the responsible ministry with the relevant proposals. With the satisfaction of the ministry responsible, a document is prepared for the cabinet to discuss, including the legal issues—especially on the proposed boundaries—before the bill is tabled for the parliament. This process sometimes takes much time, but it is important, as the communities are the key stakeholders.

Conclusion

TANAPA has the task of protecting the park's resources, as well as developing appropriate tourism facilities. It must also ensure that the communities adjacent to the park benefit from the revenues collected. There is always an issue of how to balance development for tourism and conservation. Limits of acceptable use as specified in the GMP/EIA provide appropriate safeguards.

The management of the proportionately immense Wilderness Zone in the Ruaha National Park creates inevitable budget challenges. Scarce funds must be utilized where the need is greatest. This situation is expected to improve as revenues from tourism in the park, and from other sources, increase. Amid globalization, it may be inconceivable to maintain areas that do not generate enough funds. However, the organization's main goal of sustainable conservation of resources and habitats remains. All parks are of equal status and in terms of conservation and needs are rated on a similar level, no matter the amount of revenue collected.

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simulations, in addition to the probabilistic simulations used in the original Wilderness Use Simulation Model and in the applications that Manning's group has conducted.

Recently, the Aldo Leopold Wilderness Research Institute, with support from the National Park Service, has been working with both groups of modelers to share ideas and work toward more coordinated development of this technology. Differences between approaches are being explored and new applications are being undertaken. We are currently writing a report that will describe the status of travel simulation modeling for parks and wilderness, including case studies that illustrate how the models work and what they can be used for.

REFERENCES

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