SUMMARY OF CONSERVATION STATUS

1. PROPERTY: Ngorongoro Conservation Area (NCA)

2. LOCATION: Tanzania

3. DATE PLACED ON WORLD HERITAGE LIST: 1979

4. CRITERIA FOR INCLUSION: (ii) significant ongoing geological processes, biological evolution and man's interaction with his natural environment
(iii) contain superlative natural phenomena, formations or features
(iv) contain the most important and significant natural habitats where threatened species of animals or plants of outstanding universal value still survive

5. PRESENT CONDITION OF THE PROPERTY:

The following assessment is based on a one week field review of management activities in the NCA in November 1983 supplemented with more recent information provided by the Chief Conservator. The present condition is one of insufficient management as a result of financial and material constraints and inefficient administration. In detail these include:

(a) Manpower and administration

-- Most senior staff have been relocated to Arusha (3-4 hours driving distance) resulting in a lack of supervision and decision making capabilities at the local level;

-- salaries for field staff are often 3-4 months in arrears;

-- advisory board meetings have been reduced from 4 per year to 2, and annual reports no longer are produced on a regular basis;

-- the NCA finds the fee increases at the College of African Wildlife Management make it difficult to use that training facility. No student is currently registered there.

(b) Facilities and maintenance

-- Some roads have recently been improved through a special tourism grant from the Ministry. Other roads have had no maintenance for more or less 5 years including the once popular road to the Empakai Crater which is now almost impassable;

-- it used to be customary for pastoralists to take their livestock into the main crater to benefit from the salts of the lakes. In order to discourage the movements of livestock into the crater, salt blocks were once provided to the villagers, however, these are no longer available.

(c) Vehicles and Equipment

-- Lack of spare parts and a severe fuel shortage resulted in few serviceable vehicles on the road;

-- radio communication equipment used for anti-poaching and for contact to outlying stations was not working due to lack of batteries.

(d) Tourism

-- In the 1977-1983 period, the number of tourists declined by 75%. Accommodation facilities were suffering as a result;

-- the recent opening of the Tanzania/Kenya border is expected to lead to a strong revival in tourism as well as increased impacts of off-road driving in the Ngorongoro Crater;

-- educational publications have been out-of-print for some years and very little printed material is available to visitors or school groups.

(e) Resource Management

-- The rhino population has been totally exterminated in the Olduvai area but 15-20 still remain in the Crater (in 1965 there were 109 counted);

-- the impact of wildfires on the ecology of the grasslands and forests is a major management concern;

-- illegal livestock grazing in Empakai Crater was observed but vehicles and manpower were not available to patrol this area;

-- livestock grazing in the Ngorongoro Crater is allowed under permit with detrimental effects.

(f) Research

-- The Serengeti Research Institute, on which the NCA relied for scientific support, no longer has an active programme and no research was being done in the NCA (November 1983).

(g) Management Plan

-- The final draft of the NCA Plan funded under World Heritage and prepared by the Bureau of Resource Assessment and Land Use Planning (BRALUP)/University of Dar-es-Salaam has been rejected by the Conservator;

-- future management plans and policies are, therefore, not formalized and there is no built-in continuity or accountability to management.

6. NATURE OF THREATS FACING THE SITE:

Management of the NCA is characterized by a slow general incremental decline in effectiveness. Without scientifically based resource management programmes, proper administrative procedures, functional education programmes, adequate facilities, equipment, trained manpower, and without the guidance from an overall plan, this decline will continue. The long term implications are lack of public support for the area, poor staff morale, a general loss of credibility and of the considerable conservation investment made in the NCA. This gradual deterioriation will not be arrested unless higher standards of management are implemented.

7. OUTLINE OF CORRECTIVE MEASURES REQUIRED:

A schedule of funding priorities was submitted with the original nomination in 1978. The draft management plan also includes suggestions for improvements. Of the many measures required the priorities appear to be: (i) re-affirmation of support and increased appropriations from the parent Ministry for the NCA; (ii) completion of a revised management plan; and (iii) external support for equipment, educational programmes, scientific studies, staff training, and technical assistance. Details of a support project would depend on priorities to be discussed with the Tanzanian authorities.

8. RECOMMENDATION:

Depending on the response from the Government of the United Republic of Tanzania, the site should be given serious consideration for inscription on the List of World Heritage in Danger.

International Union for Conservation of Nature and Natural Resources

July 1984

TANZANIA

NAME **Ngorongoro** Conservation Area

MANAGEMENT CATEGORY VIII (Multiple Use Management Area)
IX (Biosphere Reserve)
X (World Heritage Site - Criteria: ii, iii, iv)

BIOGEOGRAPHICAL PROVINCE 3.05.04 (East African Woodland/savanna)

GEOGRAPHICAL LOCATION In the Arusha Region of northern Tanzania, south-east of Serengeti National Park. 2°30'-3°30'S, 34°50'-35°55'E

DATE AND HISTORY OF ESTABLISHMENT 1959 by Ordinance No. 413 as amended by the Game Parks Law (Miscellaneous Amendments) Act No. 14 of 1975. Inscribed on the Unesco World Heritage List in 1979. Approved as part of Serengeti-**Ngorongoro** Biosphere Reserve in 1982.

AREA 828,800ha; contiguous to Serengeti National Park (1,476,300ha) and close to Lake Manyara National Park (32,500ha). Serengeti is contiguous to Maswa Game Reserve and Maasai Mara National Park in Kenya. The biosphere reserve covers 2,305,100ha, and the World Heritage site 809,440ha.

LAND TENURE Government

ALTITUDE Under 1,500m to 3,648m

PHYSICAL FEATURES The open plains of the eastern Serengeti rise to the crater highlands of the volcanic massifs of Loolmalasin (3,587m) and Oldeani (3,168m) dating from the late Mesozoic-early Tertiary period. **Ngorongoro** Crater is one of the largest inactive unbroken calderas in the world which is unflooded. It has a mean diameter of 16-19km, a crater floor of 26,400ha, and a rim soaring to 400-610m above the crater floor. The formation of the crater and other highlands are associated with the massive rifting which occurred to the west of the Gregory Rift Valley. The conservation area also includes Empakaai Crater and Olduvai Gorge, famous for geology and associated palaeontological studies.

CLIMATE Because of the great amplitude in relief and the dynamics of air masses, there is a great variation in the climate of the area. In the highlands, it is generally moist and misty, and temperatures in the semi-arid plains can be as low as 2°C, but can often go up to 35°C. Rainfall is seasonal and follows the altitudinal gradient. Annual precipitation varies from under 500mm on the arid plains in the west, to 1700mm along the forested slopes in the east.

VEGETATION A variable climate and diverse landforms and altitudes have resulted in several distinct habitats. Scrub heath and the remains of dense montane forests cover the steep slopes. The crater floor is mainly open grassy plains with alternating fresh and brackish water lakes, swamps and two patches of *Acacia* woodland; Lerai Forest, comprising dominant tree species *Acacia xanthophloea* and *Rauvolfia caffra*; and Laiyanai Forest with

Cassipourea malosana, Albizia gummifera, and Acacia lahai. The area includes undulating plains covered in grass, which become almost desert during periods of severe drought. These grass and shrublands are rich and support very large animal populations and are relatively untouched by cultivation. The upland woodlands contain Acacia lahai and A. seyal and perform a critical watershed protection function.

FAUNA There is a large population of wild ungulates in the crater including: wildebeest Connochaetes taurinus (1.06 million estimated in 1980), zebra Equus burchelli (72,000), eland Taurotragus oryx, gazelles Gazella granti and G. thomsoni (347,000), black rhinoceros Diceros bicornis (E) (at least 20; the **Ngorongoro** Crater representing perhaps the only viable breeding population left in northern Tanzania), and hippopotamus Hippopotamus amphibius (very uncommon in the area). The crater also has the densest known population of lion Panthera leo (estimated 68 in 1987). On the crater rim are buffalo Syncerus caffer, elephant Loxodonta africana (V), mountain reedbuck Redunca fulvorufula and leopard Panthera pardus (T). Serengeti migrants, including over one million wildebeest are numerous on the plains. Waterbuck Kobus ellipsiprymnus mainly occur near Lerai Forest, while serval Felis serval occur widely in the crater as a whole and on the plains to the west. Particularly common in the reserve are lion Panthera leo (T), hartebeest Alcelaphus buselaphus, and spotted hyena Crocuta crocuta. Cheetah Acinonyx jubatus (T), though common in the reserve as a whole, are scarce in the crater itself. Wild dog Lycaon pictus have recently disappeared from the crater and may have declined elsewhere in the Conservation Areas as well. Golden cat have recently been in the **Ngorongoro** forest. Birds include ostrich Struthio camelus, kori bustard Choriotis kori, possibly lammergeier Gypaetus barbatus, Verreaux's eagle Aquila verreauxii, Egyptian vulture Neophron percnopterus, rosy-breasted longclaw Macronyx ameliae and lesser flamingo Phoeniconaias minor (on the lake in **Ngorongoro** crater and Lake Ndutu). Sunbirds in the highland forest include golden winged sunbird Nectarinia reichenowi and eastern double collared sunbird N. mediocris. Papilio sjoestedti (R), sometimes known as the Kilimanjaro swallowtail, flies in the montane forests of Mt Meru, Mt Kilimanjaro and **Ngorongoro** in north-eastern Tanzania. It has a very restricted range but is well protected in national parks.

CULTURAL HERITAGE The NCA has palaeontological and archaelogical sites over a wide range of dates. The four major sites are: Olduvai gorge, Laetoli site, Lake Ndutu site, and the Nasera Rock Shelter. The variety and richness of the fossil remains, including those of early hominids, has made **Ngorongoro** one of the major areas in the world for research on the evolution of the human species. Olduvai Gorge has produced valuable remains of early hominids including Australopithecus boisei (Zinthanthropus) and Homo habilis as well as fossil bones of many extinct animals. Nearby, at Laetoli, are fossil hominid footprints of Pliocene age.

LOCAL HUMAN POPULATION There is considerable controversy about the exact number of people in the NCA partly because pastoral people, being mobile, are difficult to enumerate, but about 22,637 Maasai in 1987 (one quarter of those living in Tanzania) live there with some 275,000 head of livestock

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which graze approximately 70-75% of the conservation area. The human population has increased by 26% between 1978 and 1987 (Kayera, n.d.). There are no inhabitants in **Ngorongoro** and Empaakai Craters or the Forest.

VISITORS AND VISITOR FACILITIES There are three lodges on the crater rim and one at Ndutu, and vehicles and guides can be hired from the Authority to go into the crater. The only interpretive centre is at Olduvai, which is focussed on the interpretation of the Gorge and its excavations. About 24% of all tourists visiting the parks of northern Tanzania stopn at **Ngorongoro**, totalling 35,130 in 1983. Visitor numbers have substantially increased since 1984, reaching more than 77,000 in 1987, of whom 36,000 were Tanzanian nationals (Kayera, n.d.).

SCIENTIFIC RESEARCH AND FACILITIES Various studies based at Seronera Wildlife Research Centre (formerly known as the Serengeti Research Institute) include monitoring of climate, vegetation and animal populations. The level of research into human and range ecology is low. Recent studies in the crater have been on lion behaviour, serval behaviour, and on rhinoceros and elephant behavioural ecology. The Seronera Research Centre in the contiguous National Park provides a research station and accommodation for scientists. There is a small research cabin within the crater.

CONSERVATION MANAGEMENT The **Ngorongoro** was first established as a conservation area to benefit the Maasai. The **Ngorongoro** Conservation Area Ordinance of 1959 created the **Ngorongoro** Conservation Area Authority (NCAA) which was charged with ensuring multiple land use there to assist in conserving and developing its natural resources, but it failed to function because of lack of rapport between the government officials and the Maasai. By 1960, a draft management plan was prepared, which was revised in 1962 and further reviewed. In 1961 the Prime Minister, Julius Nyere issued the Arusha Manifesto. The Tanzanian government is now conducting a pioneer experiment in multiple land use (one of few such areas in Africa) which attempts to reconcile the interests of wildlife, Maasai pastoralists, and conservation. The 1975 **Ngorongoro** Conservation Area Ordinance stipulates the objectives of the areas as follows: the conservation and development of the NCA's natural resources; the promotion of tourism; and the safeguarding and promotion of the interests of the Maasai. Cultivation was banned in 1976 due to incompatability with wildlife conservation (though it still remains a problem). Forest areas protect the local water catchment, soils and vegetation. **Ngorongoro** Conservation Area Management Plan proposals have been submitted but have been rejected by the Chief Conservator because the proposed plan is regarded as going beyond its terms of reference. Some animals, such as buffalo, wildebeest and zebra migrate out of the crater during periods of drought and considerable effort is being made to prevent the migration routes from being encroached upon by settlements and agricultural developments. The contiguous and nearby protected areas provide key feeding grounds for a number of species that migrate seasonally, for example wildebeest, zebra and Thomson's gazelle. Efforts have been made to control poaching with the aid of FZS, AWF, TWPF, WWF, anc the police. In an effort to increase international support for conservation, the Tanzanian government requested that **Ngorongoro** be put on

the list of World Heritage Sites in Danger (Thorsell, 1985). It has since been included in the list of eleven most endangered areas (IUCN, 1985). IUCN/WWF Project 1934 was set up in 1981 to combat poaching of rhinoceros in the Lake Eyasi area. Two vehicles and radios have been provided. Following the Serengeti Workshop, convened by the Ministry of Natural Resources and Tourism in December 1985, a Government of Tanzania/IUCN **Ngorongoro** Conservation and Development Project was initiated. The principal objectives of the project are to identify the requirements for long-term conservation of wildlife, forests, archaeological sites and landscape; assess land use pressures in, and adjacent to the conservation area; determine development needs of resident pastoralists; review and evaluate management options; formulate conservation and development policies that fulfills the needs of both local Maasai people and conservation priorities; and to develop proposals for follow-up activities (IUCN, 1987). The NCAA produce up to 40,000 tree seedlings annually in an attempt to reduce pressure on natural forest for fuel wood. Proposals to ease conflicts between nature protection and agriculture within the Masai Ecosystem are made by Prins (1987).

MANAGEMENT PROBLEMS About 5% of the area has been degraded by trampling and overgrazing, and there is a threat from vehicle-tracks becoming excessively enlarged, principally due to tourism pressure. There is poaching, mainly of black rhinoceros and leopards, and lack of equipment, fuel, low morale and
rough terrain, make this difficult to suppress effectively. There is no conclusive evidence to indicate that the pastoralists are responsible for this poaching threat, which may be the responsibility of professionals involved in international trade. Wildebeest have increased to 1.3 million due to control of rinderpest in cattle, but this has brought problems as wildebeest carry the cattle disease malignant catarrh fever, which kills cattle (although it has little effect on wildebeest). Wildebeest are also vectors for tick borne cattle diseases. There is a problem with securing water supplies, arising from the neglect od dams, boreholes and pipelines installed during the 1950s and 1960s. Grassland areas are degrading with the spread of unpalatable Eleucine jageori grass and other species, and poorly controlled or inappropriate burning. The forests to the north-east are increasingly threatened by fuel wood gathering, both by people living in the conservation area and in villages in the Karatu and Kitete areas along the eastern boundary. A number of poorer Maasai from the conservation area make a living collecting honey from wild bee colonies in the forest, frequently burning trees in the process. Land-use conflicts have increased in recent years due to the Maasai becming more sedentary, and thus increasing the demand for development; human populations have continued to grow; and livestock are no longer to provide for all Maasai who are consequently turning to (illegal) grain production (Kayera, n.d.).

STAFF Some 408 staff (1984)

BUDGET ninety-two per cent of the budget is derived from visitor entrance fees.

LOCAL ADMINISTRATION **Ngorongoro** Conservation Area Authority, PO Box 1,

Ngorongoro Crater

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