Ngorongoro Conservation Area (Tanzania)
No 39bis

Name of property:

Ngorongoro Conservation Area

Location:

Ngorongoro District
Arusha Region

Brief description:

The Ngorongoro Conservation Area spans vast expanses of highland plains, scrub-bush, and forests. Rising from the plains of the Serengeti National Park in the north-west, it extends over the rim of the enormous Ngorongoro Crater to the eastern arm of the Great Rift Valley.

The area has yielded an exceptional record of human paleobiology, behaviour, paleoenvironments and evolution since the Pliocene, covering a span of almost four million years. There are fossilised hominin footprints at Laetoli, a sequence of diverse, evolving hominin species within Olduvai gorge, which range from Australopiths such as *Zinjanthropus boisei* to the *Homo* lineage that includes *Homo habilis*, *Homo erectus* and *Homo sapiens;* an early form of *Homo sapiens* at Lake Ndutu; and, in the Ngorongoro crater, remains that document the development of stone technology and the transition to the use of iron. Physical evidence of the most important benchmarks in human evolutionary development has thus been found in Ngorongoro.

Within the central part of conservation area live the Maasai people. Originally pastoralists who migrated south from Kenya into the Serengeti in the early 1800s, they were moved into this area in 1959 when the Serengeti Game Reserve was created and now live as agro-pastoralists, mainly in permanent settlements.

Category of property:

In terms of categories of cultural property set out in Article I of the 1972 World Heritage Convention, this is a *site.*

In terms of the *Operational Guidelines for the Implementation of the World Heritage Convention* (January 2008) paragraph 47, it is also in part a *cultural landscape*.

1. BASIC DATA

Included in the Tentative List: 28 January 2009

International Assistance from the World Heritage Fund for preparing the Nomination: 2004

Date received by the World Heritage Centre: 27 January 2009

Background: This is a re-nomination under cultural criteria of the Ngorongoro Conservation Area property that was inscribed on the World Heritage List under natural criteria (vii), (viii), (ix) and (x) at the 3rd session of the World Heritage Committee (Luxor, 1979).

Consultations: ICOMOS has consulted its International Scientific Committees on Archaeological Heritage Management and Cultural Landscapes and several anthropologists.

Comments on the assessment of this renomination were received from IUCN on 18 February 2010 and are related to the following issues:

- Existing State of Conservation issues not reflected in the nomination
- Maasai pastoralism
- Governance and Effective Management
- The relationship between nominated cultural value and natural criteria

The information was carefully considered by ICOMOS in reaching the final decision and recommendation in March 2010, and IUCN has also reviewed the presentation of its comments as included in this report by ICOMOS.

Literature consulted (selection):

Braun, D.R., Rogers, M.J., Harris, J.W.K., Walker, S.J., "Landscape-scale variation in hominin tool use: Evidence from the Developed Oldowan" *Journal of Human Evolution* 55, 1053–1063, 2008.

Blumenschine, R.J., Prassack, K.A., Kreger, C.D., Pante, M.C., "Carnivore tooth-marks, microbial bioerosion, and the invalidation of Domínguez-Rodrigo and Barba's (2006) test of Oldowan hominin scavenging behavior." *Journal of Human Evolution* 53, 420-426, 2007.

Domínguez-Rodrigo, M., Barba, R., New estimates of tooth marks and percussion marks from FLK Zinj, Olduvai Gorge (Tanzania): the carnivore-hominid-carnivore hypothesis falsified. *Journal of Human Evolution* 50, 170-194, 2006.

Dominguez-Rodrigo, M., Barba, R., "Five more arguments to invalidate the passive scavenging version of the carnivore-hominid-carnivore model: a reply to Blumenschine et al. (2007a)", *Journal of Human Evolution* 53, 427-433, 2007.

Dominguez-Rodrigo, M., Barba, R., Egeland C., *Deconstructing Olduvai: a taphonomic study of the Bed I sites*, Dordrecht: Springer, 2007.

Egeland, C., Dominguez-Rodrigo, M., "Taphonomic perspectives on hominid site use and foraging strategies during Bed II times at Olduvai Gorge, Tanzania", *Journal of Human Evolution* 55, 1031–1052, 2008.

Wood, B., and Richmond, B.G. 2000. Human evolution: taxonomy and paleobiology. *Journal of Anatomy* 196:19-60.

ICOMOS examined the complete documentation linked to the World Heritage inscription and monitoring of Ngorongoro Conservation Area as a natural property.

Technical Evaluation Mission: A joint ICOMOS/IUCN mission visited the site from 3 to 11 October 2009.

Additional information requested and received from the State Party: On 6 January 2010, ICOMOS wrote to the State Party requesting further information on proposed constructions at Laetoli associated with the opening of the fossil footprints and on a proposed monument on the *Zinjanthropus* site in Olduvai Gorge. Supplementary information was submitted by the State Party on 26 February 2010. The analysis of this information is included in the present evaluation.

Date of ICOMOS approval of this report: 17 March 2010

2. THE PROPERTY

Description

The Ngorongoro Conservation Area covers an area of 8,292Sq.km. To the north-west, west, north and north-east are game reserves: the property is contiguous with Serengeti National Park, Loliondo Game Controlled Area, Natron Game Controlled Area, Mto Wa Mbo Game Controlled Area, Maswa Kamali Game Reserve, Maswa Mbono Game Reserve, and Maswa North Game Reserve. Together these areas constitute the greater Serengeti ecosystem. On its eastern and southern boundaries are forests at the edge of the Lake Eyasi Rift Valley Escarpment and beyond are the agricultural communities of Karatu and Mbulu districts.

Within the Conservation Area is the spectacular Ngorongoro Crater, the world's largest collapsed volcanic crater, with its mountain rim enclosing grazing areas, and to it north-west Olduvai Gorge, a 14km deep ravine.

The area has been subject to extensive archaeological research for over 80 years and has yielded a long sequence of evidence of human evolution and human-environment dynamics, collectively extending from 4 million years ago to the beginning of this era. Within that unique sequence the two main sites are Laetoli, with evidence of 3.6 million year old footprints, and Olduvai Gorge, with its complete sequence of human fossil and artefactual evidence going back 2 million years. The discovery of *Zinjanthropus* and *Homo habilis* from Olduvai captured huge public imagination world-wide and is arguably the most important scientific discovery ever made in Tanzania and East Africa, doubling the timespan for the history of human ancestors and pushing much further back the association of hominins with the use of stone tools.

To date, about 95 hominin remains representing various genera have been recovered at the Laetoli and Olduvai Gorge sites (at least 20 specimens from Laetoli site and about 75 from Olduvai Gorge site).

The other sites are Lake Ndutu, Nasera Rock Shelter and the Ngorongoro crater which provides evidence of Later Stone Age technology and the transition to the Iron Age.

Overall the nominated site is seen to have potential to reveal much more evidence concerning the rise of anatomically modern humans, modern behaviour and human ecology.

Within the centre part of the Conservation area are settlements of the previously pastoral Maasai people and their extensive grazing areas.

The five archaeological sites, the wider archaeological landscape and the Maasai pastoral landscape are considered separately.

The descriptions are based on material from the nomination dossier, but augmented as the information provided by the dossier is in places minimal and includes little scholarly archaeological or ethnographical material. No detailed description or plans are provided as to the precise extent of the areas that have been excavated and researched. The academic literature referred to is incomplete, if not one-sided, particularly with regard to Olduvai Gorge. Current debates about the taphonomy and nature of the deposits, whether hominin or carnivore accumulated, are not alluded to. These debates are pertinent, as they go to the essence of the cultural landscape which is the basis of the nomination.

With regard to the Maasai, the cultural descriptions in the nomination dossier are not backed up with reference to any ethnographic study, or to any contemporary or historical socio-cultural anthropology. Neither are the claims that the landscape demonstrates unique or exceptional living traditions supported by evidence.

The key component parts of the property are described under the following headings:

- *Laetoli*
- *Olduvai Gorge*
- *Lake Ndutu*
- *Nasera Rock Shelter*
- *Ngorongoro Crater*
- *Wider Archaeological Landscape*
- *Maasai Pastoral Landscape*

Laetoli

The Laetoli site is isolated within the central portion of the Conservation Area, some 40 kilometres south of Olduvai Gorge. The fossil site includes both paleontological and archaeological resources. Important Pliocene and Pleistocene hominin finds were discovered including twenty hominin specimens of which the earliest is the *Australopithecus afarensis* Type specimen.

The site is best known for the Laetoli footprint locality, which records a fossil record of hominin footprints that stretch about fifty metres along nitrocarbonatite volcanic deposits. The foot trails include tracks of three individuals: one small on the left and one large on the right; the third individual's prints are superimposed on those of the larger individual on the right. All relate to *Australopithecus afarensis* and to a time when bipedalism was at a critical stage in human evolution some 3.59 million years ago. The footprints have been re-buried (see Conservation below).

Olduvai Gorge

The Olduvai Gorge locality includes numerous paleo-anthropological sites both buried and exposed within the gorge which together hold a complete sequence of human fossil and artefactual evidence going back 2 million years. Discovered in 1959, *Zinjanthropus* was the first hominin in the world to be recovered from intact geological sediments securely dated at 1.75 million years ago by the Potassium-Argon technique and at that time the earliest hominin from East Africa. This age was much older than scientists had imagined, essentially doubling the antiquity of human ancestors.

Subsequently a whole series of early hominins have been recovered.

Of utmost importance were discoveries of *Homo* lineage (*Homo habilis*), nick named "handy man" interpreted to have been the maker and user of Oldowan stone tools together with other stone tools (Acheulian). Through the work of the archaeologists Drs. Louis and Mary Leakey, Olduvai was the first site to demonstrate the evolution of human technology from Oldowan to Acheulian to Middle Stone Age to Later Stone Age to Neopastoralithic, showing the order and ages of each technological transition in secure geological contexts.

The earliest deposits at Olduvai contain rich assemblages of stone tools from which are the type series for the Oldowan, the world's earliest known technological tradition. Stone artefacts were found in direct association with butchered large mammalian bones. This observation led the Leakeys to interpret the finds as *"living sites"*, socio-foci where food was brought for sharing. A fossilised hand and a fossilised foot were further crucial in linking hominins with tools and interpreting human biological evolution and cultural development.

A wide variety of fossils belonging to non-hominin species have also been recovered from Olduvai Gorge. They include both extant and extinct organisms.

A museum/ laboratory for storage and analysis of collections accrued from research has been constructed at Olduvai.

Lake Ndutu

Research works at Lake Ndutu, 40 km southwest of Olduvai, has yielded remains of a skull dated to between 400,000 and 200,000 years BP and representing an archaic form of *Homo sapiens*, probably a direct descendant of *Homo erectus* or an off-shoot from a common ancestry with the latter. Thus the Lake Ndutu site has documented the late stages of human biological development, in particular the transition between *Homo erectus* and anatomically modern humans. The site has also yielded stone tools belonging to the Middle Stone Age, something not previously documented elsewhere in this area.

Nasera Rock Shelter

Within the shelter, which lies to the north of the property and within the Maasai grazing lands, were uncovered stone tools belonging to Middle Stone Age and Later Stone Age technological developments.

Ngorongoro Crater

The Ngorongoro burial mounds, within the Ngorongoro Crater, document the last stages of the development of stone technology and the ultimate transition to Iron Age technology in the area. They reveal that area appears to have been settled by humans around 2,000 years BP. The burials discovered were associated with ritual practices.

Wider Archaeological Landscape

The nomination dossier stresses the importance of the wider landscape as being potentially rich in cultural heritage remains that could yield a significant further number of sites that might add knowledge to our understanding of the biological and technological evolution of humans and also the evolution of non hominins. However, no details are provided of surveys of where the potentially richest areas are considered to be.

Maasai Pastoral Landscape

The Maasai are described in the nomination dossier as pastoralists and nomads who move around with their animals in search of grazing grounds and water sources and only consume blood, milk and meat from the animals they domesticate. Although at the time the Ngorongoro Conservation Area was formed, the Maasai were still pastoralists in numbers that were sustainable within the Conservation Area, (see History below), the reality is now that the much larger community of Maasai

(some 64,000 people) presently inhabit a number of densely populated villages and only a small percentage spend part of the year in isolated 'bomas' (traditional houses with enclosures for animals protected by fences of cut thorn branches) scattered in the Conservation Area. Furthermore, they no longer live and move across the whole Conservation Area. Exact details on the number and locations of villages and Maasai bomas are lacking.

The villages are apparently permanent, as evidenced by the types of structures (brick buildings) and the presence of schools and medical clinics. The Maasai livestock includes cattle, sheep, goats, and donkeys. The State Party informed the mission that the Maasai have recently begun keeping camels, although this is not traditional. Agriculture is also playing an increasingly important role for the Maasai people within the area, related to shortfalls in food and revenue derived from the more traditional livestock husbandry. The largely settled communities now rely for food on agricultural produce as well as on resources from their animals.

Parts of the landscape are said to be associated with ritual practices such as the shifting sand dunes (5 km north of Olduvai Gorge), Nasera Rock Shelter and *'many other places'*.

It is also acknowledged that the Maasai play a role in the tourism industry through the sale of handicraft products and the performance of traditional dances for tourists.

Traditionally the Maasai organised their young men into a warrior class to defend the livestock and grazing areas from wild animals and also from settled agriculturalists living around their grazing grounds. Maasai *Morani* or warriors were initiated once they had been trained for up to eight years at remote boys' villages where it was ensured they were brave enough to spear a lion and when they returned to their village to get married. The *Morani* wear their hair in long braids dyed with red clay.

No information is provided on the organisation of grazing grounds, on the traditional or more modern grazing arrangements, or on how numbers of livestock are managed.

History and development

Details on history are only provided in the nomination dossier for the archaeological sites – no material is provided for the Maasai pastoral landscape or on the history of the Ngorongoro Conservation Area. As the history of the association between the Maasai and the Conservation Area has relevance for an understanding of the present arrangements, ICOMOS has included brief information on the history of the Maasai in this area and of the designation of the area.

Archaeological sites

The remains of hominin fossils in the Olduvai Gorge were first noted in 1911 by Prof. Kattwinkel, a German entomologist, while making observations on butterflies. Under his recommendations, a scientific expedition was led by Prof. Hans Reck, who in 1913-4 recovered fossil specimens that included extinct forms of large mammals.

In 1931, Louis Leakey, a British scholar, began work at Olduvai. His work led to the discoveries of the oldest stone tools (Oldowan Industrial techno-complex) that made Olduvai Gorge a type site. In 1959, Mary Leakey made the discovery of the then oldest hominin in eastern Africa (*Zinjanthropus boisei*) nick-named, "nut cracker man" - the first species of early hominin (now subsumed under the genus *Paranthropus*) to be found outside of South Africa.

The discovery of the *Zinjanthropus boisei* skull (now subsumed under the genus *Paranthropus*) was seen as a major milestone in the history of paleoanthropology, and reinforced the idea, put forward by Leakey and originally proffered by Charles Darwin in 1871, that Africa could be seen as the 'cradle of humanity' in demonstrating how humans were descended from an ape ancestry.

The finds sparked a surge of paleoanthropological interest in East Africa.

In 1960, further research works in the same horizons yielded the first *Homo habilis*. This species became the Type Specimen (holotype) of the genus *Homo*. Morphologically and morphometrically, this large-brained hominin was the first species described as a direct ancestor of later hominins including modern humans (*Homo sapiens*).

Subsequent research in the late 1980s involved teams of Tanzanian and American scientists under the Institute of Hominid Origins led by Donald Johanson. From 1990 to date, a paleoanthropological research project is ongoing at Olduvai Gorge (Olduvai Landscape Paleoanthropology Project- OLAP) co-led by the University of Rutgers (USA) and the University of Dar es Salaam (Tanzania).

Some of the excavated material is stored at Olduvai, and a considerable amount is housed at the National Museum of Kenya.

Laetoli was first studied by the German entomologist, Kohl Larsen in the 1920s and yielded few fossils. In 1974 a team led by Dr. Mary Leakey made the discoveries of the hominin footprints trails and excavations were carried out in 1978 -1979. Also in 1974 the hominin remains were found which are seen to be associated with the footprints.

Research work at Lake Ndutu, which yielded remains of the Ndutu human skull were carried out in 1973 –

although the archaeologists are not identified they are known to be A. A. Mturi.

Nasera Rock shelter was studied by Michael Mehlman – no date is given.

Ngorongoro Crater floor was first recognized to have burial mounds by a cattle rancher, Siedentopf, and his assistant, Rothe. The resources were later examined by Prof. Hans Reck in 1913 and by Dr. Arning in 1915.

Maasai Pastoral Landscape

None of the following information is included in the dossier. The Maasai migrated south from Northern Africa, probably in the region of the Nile Valley in Sudan, northwest of Lake Turkana, sometime between the 14th and 16th centuries, before establishing themselves in the Eastern region of Africa in the mid 17th century. They quickly spread south through the Rift Valley, whose fertile grasslands were ideal for their cattle, and around the 17th or 18th centuries reached their present-day territories in Kenya and Tanzania, where they were feared and renowned as warriors.

From 1830 onward, Maasai unity disintegrated into a succession of wars between the various clans, largely over cattle and grazing grounds, which led to territorial losses and gains by their neighbours. By the end of the 19th century, their neighbours and British colonists had displaced the Maasai from the rich lands of the central Rift Valley - the area between Lake Victoria and Mount Kenya. The infamous 1904 Maasai Agreement drawn up by the colonial power had effectively reduced their territory by two thirds. A further wave of forcible 'relocation' took place in 1911-13, confining the Maasai to distant reserves in southern Kenya and Tanzania.

The Ngorongoro Conservation Area was created in 1959 as a separate part of the Serengeti National Park. The Maasai were allowed to live in the Ngorongoro Conservation Area but were excluded from the National Park. The Maasai elders who agreed to this deal subsequently said they did not know what they were signing. Previously a combination of wildlife experts and palaeontologists, including Louis Leakey and Bernard Grzimek (author of *Serengeti Shall Not Die*), had campaigned to remove the Maasai from the whole of the Serengeti/Ngorongoro area and make the whole area a national wildlife park.

Post independence, tourism was developed around big game watching from game lodges in the Serengeti and Ngorongoro. In the 1990s, when such tourism begun to yield high revenues, there was pressure to increase the game reserves and Ikorongo and Grameti Games Reserves were added to Serengeti's western border and the local people once again removed. Since then there have been moves to create Wildlife Conservation Areas to the north of the Serengeti: the Maasai complained in a case that went to the Tanzanian Human Rights commission.

Within the Ngorongoro Conservation Area, the Maasai have increased in numbers from around 10,000 in 1960s to just over 60,000 today. There were moves from 1975 to ban agriculture in the area and in 1992 the Government indicated that Ngorongoro should be for wildlife and the Maasai be encouraged to move. In 2003, 200 families were evicted as illegal immigrants. The Maasai are currently only in part of the nominated area (in spite of the fact that the 1959 agreement allowed them to live in the whole).

3. OUTSTANDING UNIVERSAL VALUE, INTEGRITY AND AUTHENTICITY

Comparative analysis

The comparative analysis in the nomination dossier fails to discuss the Maasai pastoral landscape. It solely discusses the archaeological and paleoanthropological heritage.

The analysis compares the property with the following inscribed sites: Lower Valley of the Awash, Ethiopia (1980, criteria (ii), (iii) and (iv)), Lower Valley of the Omo, Ethiopia (1980, criteria (iii) and (iv)), Lake Turkana National Parks, Kenya (1997, criteria (viii) and (x)), Fossil Hominin Sites of Sterkfontein, Swartkrans, Kromdraai, and Environs, South Africa (1999, criteria (iii) and (vi)) and concludes that it has many similarities with them – this seems to be a misunderstanding of the purpose of the comparative analysis which is to demonstrate that there are no similar properties already inscribed on the List.

The comparative analysis in the nomination dossier provides comparisons for individual sites within the property. In considering individual sites, the analysis is generally accurate though in places the uniqueness of individual sites is overstated, and presented with a certainty that does not quite reflect the level of academic debate associated with the finds. It is stated that Laetoli is the only site with evidence for habitual bipedalism from 3.59 million BP. Phrased in this way the statement is not correct. Laetoli is unique in having a trail of footprints. There is osteological evidence for bipedalism from other places, such as Afar.

The Lake Ndutu finds have definitely been overstated. Equally old Middle Stone Age materials have, for instance, been recovered from Mwanganda, Malawi, and South Africa. Further, there have been several archaic *Homo sapiens* and *Homo heidelbergensis* specimens found in Africa. The Ndutu skull needs to be put into context.

The comparative analysis emphasizes fossil evidence at the expense of stone tool traditions. For instance the pre-Oldowan tradition is not discussed.

In addition, in isolation, the importance of Nasera Rock Shelter and the Ngorongoro graves have been

overstated. There are numerous Middle Stone Age rock shelters in East and Southern Africa, as well as graves from 2,000BP. Lake Ndutu and Nasera Rock Shelter do however complement the human evolution sequence in the Ngorongoro Conservation Area with behavioural and material culture evidence from the late Pleistocene and Holocene. The statement that the Ngorongoro graves give evidence that people *'cared for the dead'* and *'undertook ritual practices'* 2,000 years ago is an obvious observation, as there is already evidence for such behaviour in Middle Stone Age times. Though interesting on their own, the graves are not especially relevant to human evolution and the rise of modern human behaviour.

ICOMOS considers that comparisons should have been made between the ensemble of sites within the Ngorongoro Conservation Area and other properties inscribed on the List. If that is done, then it becomes clear that although individual sites may be paralleled elsewhere, the group of sites in Ngorongoro, is not paralleled in the List, as the sites represent a milestone in our understanding of human evolution.

The second part of the comparative analysis should relate to comparisons that show that the Conservation area is unmatched by other sites that might be put forward in terms of the overall value of the complete ensemble of sites in a landscape that has the capacity to produce further evidence. ICOMOS considers that although this has not been undertaken, such comparisons would be positive, within our current knowledge, even taking into account the level of debate on how the finds are interpreted.

A section on the Maasai should have been included in the comparative analysis as they are part of the nomination as a 'living civilization'. The Maasai are linguistically classified as an Eastern Nilotic people. Most communities speaking a Nilotic language, whether Eastern Nilotic or Southern Nilotic, have or had a pastoralist subsistence economy. Examples of such communities in Kenya and Tanzania are the Barabaig, Nandi, Suk, Lokop/Samburu and Kipsigi to name but a few. In addition there are numerous pastoralist communities from Tanzania to Sudan from other linguistic backgrounds such as the Turkana, Rendille, Nuer and Somali. Notwithstanding cultural and regional differences, all of these groups share, in various ways and to various extents, a great number of cultural characteristics that in the nomination dossier are implicitly ascribed to the Maasai alone. Many pastoralist societies have a strong sense of cultural identity and conservatism, warrior-like age groups, extensive use of herbalism, dislike for bush meat, etc. The Maasai, although extremely interesting in terms of their cultural traditions, are therefore, in ICOMOS's view, neither a unique nor an exceptional testimony to such pastoralist traditions. Furthermore they are not confined to the Conservation Area and include neighbouring groups in Tanzania and in Kenya.

ICOMOS considers that the comparative analysis presented in the nomination dossier does not adequately justify consideration of this property for the World Heritage List. However, ICOMOS considers that on the basis of the extensive evidence available for the paleo-archaeological sites, it can be stated that a similar ensemble of sites is not represented on the List, nor might a similar ensemble be nominated in the future on the basis of what is currently known from excavations, in terms of the excavations being a milestone in our knowledge of human development.

ICOMOS considers that the comparative analysis completed with the extensive information available for the paleo-archaeological sites justifies consideration of this property for inscription on the World Heritage List on the basis of cultural criteria. ICOMOS does not, however, consider that the evidence available for the Maasai cultural traditions, in terms of their inter-action with the landscape, justifies consideration of their inclusion in the List.

Justification of Outstanding Universal Value

The nominated property is considered by the State Party to be of Outstanding Universal Value as a cultural property for the following reasons:

- Age and quality of cultural materials that have been discovered in the area contribute significantly to knowledge on evolution of early hominins to anatomically modern humans, and associated technological change from about 4 million years ago to the present.
- Diversity and quantity of cultural materials/artefacts is of huge importance both for the study of the human evolution locally but also a means of understanding the larger tradition and environment in the whole of Eastern Rift Valley stretching from Israel to Mozambique.
- The unique co-existence of wild animals, domesticated animals and people in the same environment. The Maasai living culture among the wildlife practically substantiates our understanding on past life ways millions of years ago.
- A natural laboratory where the act of nature has and still is preserving our heritage.

ICOMOS considers that the first part of this justification that relates to the global importance of the hominin remains is appropriate. Indeed, in 1999 ICOMOS "*drew attention to the cultural importance of this site, which contained one of the most famous fossil hominin sites in the world, Olduvai Gorge, as well as the more recently discovered Laetoli site".* More information could have been provided in the nomination dossier to substantiate and make more specific the ideas in the second point, given the wealth of published research.

As for the third point, the idea of the Maasai substantiating knowledge of past ways of life has not been justified in any other that a general way and further the Maasai cannot be directly linked to earlier peoples living in the area as they are believed to have migrated to the area only in the early 19th century (although there is evidence that pastoralists have grazed the area for some two millennia). The sections on co-existence of wild and domesticated animals and people, and the idea of a natural laboratory that preserves cultural artefacts cannot readily be related to cultural criteria. Although the Maasai pastoral landscape is nominated for its pastoral and ceremonial associations in the introduction to the nomination dossier, this is not reflected in the justification. ICOMOS does not consider that the Maasai pastoral landscape can be justified as being of Outstanding Universal Value, nor does it satisfy conditions of integrity or authenticity – for the reasons set out below.

Integrity and Authenticity

Under this heading, the nomination dossier only considers authenticity and does not consider integrity. ICOMOS has nevertheless considered integrity on the basis of the material presented in the nomination dossier. ICOMOS's consideration is focused on the potential cultural value of the property as re-nominated and is without prejudice to existing issues regarding the integrity of the property as recognised by its existing inscription under natural criteria.

Integrity

In terms of whether all the attributes that are needed to reflect Outstanding Universal Value under cultural criteria, (associated with paleo-archaeological sites and landscape), ICOMOS considers that the whole Conservation Area is an appropriate boundary to encompass not only the known remains but also areas of high archaeo-anthropological potential where related finds might be made.

However the integrity of specific attributes is to an extent under threat. In Olduvai Gorge herds of Maasai livestock, which pass through the gorge to access water, promote erosion of the fossil deposits and trampling/destruction of surface finds. The architectural plans shown to the mission for a podium at the fossil locality *FLK-Zinjanthropus*, within the gorge could represents a threat to one of the more important Plio-Pleistocene archaeological sites known to science, as from the drawings it appears that the site would be destroyed by the proposed constructions as would all chances of future research (see Development Pressures below).

At Laetoli, plans underway to open the footprint trackway for public viewing within an exhibition building (see Development pressures below) could represents a threat to the integrity of the locality.

The Nasera Rock Shelter is clearly neglected by the Ngorongoro Conservation Area Authority (NCAA) and the Division of Antiquities. The walls of the rock shelter are covered in graffiti, some of which overlay faded rock art. The shelter itself is currently used as a corral for Maasai livestock. As a result, the archaeological deposits have suffered from substantial trampling and mixing of the uppermost archaeological deposits. These ongoing threats promote deterioration and remain uncontrolled.

In terms of the Maasai pastoral landscape, integrity relates to how far all the attributes needed to display their pastoralism and ceremonial associations with the landscape are within the boundaries. Here the issue is that the Maasai within the Ngorongoro Conservation Area cannot be said to represent the Maasai pastoralists who are spread over a much wider area to the north in Kenya as their distinctive pastoralism within the Conservation area has now been significantly changed into agro-pastoralism through the impact of population growth and other factors and no substantial details or justification has been put forward to show that a robust pastoral system still exists or indeed is fostered. ICOMOS notes the ongoing consideration of Maasai pastoralism in relation to conservation of the natural value~~s~~ of the property.

Authenticity

Authenticity relates to the way the attributes suggested as reflecting Outstanding Universal Value truthfully reflect their value. In terms of the hominin remains, and the Stone and Iron Age remains, it is the precise sites where the remains were found as well as the wider area where further potential associated discoveries may be made that convey the value. In general, ICOMOS considers that the authenticity of the fossil localities is unquestionable, however given the nature of fossil sites, the context for the fossil deposits need to remain undisturbed (except by natural geological processes).

The nomination dossier does not contain sufficient detailed information on most of the sites to delineate their extended areas or the areas of archaeological sensitivity, or sufficient guarantees in terms of management arrangements to ensure that the sites will remain undisturbed and not threatened by visitor access, construction or grazing cattle and thus their authenticity is vulnerable.

For the Maasai pastoral landscape, authenticity relates to how well the overall landscape manifests the traditional pastoral and ceremonial system of the Maasai. ICOMOS considers that here the issue is that their distinctive pastoralism has now been substantially changed into agro-pastoralism through the impact of population growth and other factors.

ICOMOS considers that the conditions of integrity and authenticity have been met for the paleo-archaeological sites and landscape, although the threats to Laetoli and

Olduvai, the lack of adequate delineation for most of the sites and archaeologically sensitive areas and the need for better conservation, management and protection for individual sites means that both integrity and authenticity are extremely vulnerable. ICOMOS does not consider that at the present time the conditions of integrity and authenticity have been met for the Maasai pastoral landscape.

Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (iii) and (iv).

Criterion (iii): bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

This criterion is justified by the State Party on the grounds that the property constitutes paleo-anthropological sites of Outstanding Universal Value which have exhibited layers of facets of combined works of nature and humans over time and still has potential to yield more information on evolution of humans, other animals, and flora, whilst also offering a home to the Maasai people, their livestock and culture.

ICOMOS considers that as the property consists of several archaeological sites and localities which have produced finds falling within a 4 million period of human/hominin history, the recognition of a palimpsest cultural landscape is more appropriate than trying to link the property with a particular cultural tradition or civilization – which has not anyway been identified by the State Party, and thus it is more relevant to consider other criteria.

In terms of the Maasai landscape, the nomination dossier states that the Maasai are *"of an outstanding significance in effective conservation (…) living in harmony with the wildlife"* (p.5, also see p.23). Moreover they are *"rich in their culture which they have preserved over years"* (p.6). However interesting these Maasai traditions are, the nomination dossier fails to explain why they are unique or exceptional or how their exceptionality is reflected in the landscape.

ICOMOS considers that this criterion has not been justified at this stage.

Criterion (iv): be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

This criterion is justified by the State Party on the grounds that the property illustrates a significant testimony for early hominin technological evolutionary history through time made evident through the discovery of Stone tools belonging to the Early, Middle and Later Stone Age technological developments (including the earliest Industrial Techno-complex belonging to Oldowan) and the Iron Age. Paleo-environmental and paleo-biogeographic reconstructions of the entire area during Plio-Pleistocene epochs have also been established and contributes to the understanding of the climate and the ecological changes of the area today.

Discoveries of hominin remains associated with mammal fossil fauna and stone tools, which have also led to scientific reconstructions pertaining to early hominin subsistence strategies and patterns, contributes to the understanding of some of the primary values of the nominated property in that it provided habitation to hunter gatherers hundreds of years ago. Socio-cultural ties extended to the dead are pinned back to 2,000 years ago as exemplified by the evidence yielded by the Ngorongoro burial mounds.

ICOMOS considers that the property is exceptional in terms of the long sequence of evidence it has yielded of human evolution and human-environment dynamics, collectively extending from 4 million years ago to the beginning of this era. The discovery of *Zinjanthropus* and *Homo habilis* from Olduvai doubled the timespan for the history of human ancestors and pushed much further back the association of hominins with the use of stone tools. Physical evidence of the most important benchmarks in human evolutionary development has thus been found in Ngorongoro.

Although the interpretation of many of the assemblages of Olduvai Gorge is still debatable (current debates about the taphonomy and nature of the deposits are not alluded to), their extent and density are remarkable. Several of the type fossils in hominin genealogy come from this site.

Furthermore, future research in the property is likely to reveal much more evidence concerning the rise of anatomically modern humans, modern behaviour and human ecology.

What needs to be established, however, is a more precise delineation of the disposition of the attributes of the property (see below) that contribute to this evidence, in order that there is a clear understanding of their scope and extent and precise agreement on what has been recognised on the ground, related to excavations and surveys, and what further areas are sensitive in archaeological terms.

ICOMOS does not consider that this criterion can be said to apply to the Maasai pastoral landscape.

ICOMOS considers that this criterion has been justified for the paleo-archaeological sites and the wider landscape but that more precise delineation of the attributes is needed.

ICOMOS considers that the nominated property meets criterion (iv) and conditions of authenticity and integrity, although they are at the moment extremely vulnerable, and that Outstanding Universal Value has been demonstrated for its paleo-archaeological interest.

Description of the attributes

The attributes that convey Outstanding Universal Value are the ensemble of paleo-archaeological sites of Laetoli, Olduvai Gorge, Lake Ndutu, Nasera Rock Shelter, and Ngorongoro Crater in their context and the wider archaeological landscape.

4. FACTORS AFFECTING THE PROPERTY

As an inscribed natural property with a long history of consideration by the Committee, including a recent joint World Heritage Centre/IUCN mission, information on threats to natural attributes is already included in SOC reports, and will also be considered under SOC at 34COM. ICOMOS comments below are in addition to this discussion and focus on the cultural attributes of the property.

Development pressures

In some of the sites buildings for tourism and services have been constructed or are being planned.

At Laetoli, an exhibition building, ablution block and a guard house as well as a road have been constructed in the vicinity of the Laetoli site in anticipation of increased visitor interest. The buildings could be clearly seen from about 400m standing at the buried footprints. The State Party argued that the newly constructed buildings are temporary and also have no direct impact on the footprints find site and could in the future if necessary be demolished.

During the mission, the State Party reported that a Laetoli Committee had been assembled, composed of representatives from the Division of Antiquities, the NCAA, and external scientists to view other fossil localities around the world as a basis for developing a strategy for opening the footprints to the public. The supplementary information provided by the State Party on 26 February 2010 explains that the genesis of this Committee had been a visit to the footprint site by the President of Tanzania who, not being impressed by the invisibility of the imprints, directed the Ministry of Natural Resources and Tourism (MNRT) to re-excavate the footprints and scientifically preserve them so they may be left open for public viewing. The MNRT has since taken the President's order as a scientific challenge to be pursued. It is being proposed that ICCROM will be co-opted into the National Steering Committee.

Formal plans for the opening of the site are not presently available. However, a concept for an exhibition building to encircle the opened footprint site has apparently been developed by an architect. The State Party is planning to seek financial support for the scheme and a consultant has been taken on to produce an action plan that is expected in mid March 2010. It is stated that this action plan shall be made available to ICCROM for comments before implementation, and that '*in finalizing the site plan for Laetoli it is envisaged that a site meeting will be convened at Laetoli (the site) in early April 2010 to involve the consultant, experts and representatives from the World Heritage Centre and ICOMOS to discuss'.*

In the supplementary information received on 26 February 2010, the State Party acknowledges that the possible re-opening of the footprints is a highly contentious issue amongst the paleo-archaeological community as there is potential for damage or destruction of the site.

ICOMOS considers that any proposals for intervention at Laetoli need to be considered and agreed in principle before any consideration is given to structures or formal plans to reveal the footprints. It is essential that such an in principle proposal be formally submitted for appraisal by ICOMOS and the World Heritage Committee, in line with the requirements of *Operational Guidelines* paragraph 172, before any commitment is made.

ICOMOS considers that it is highly unlikely that proposals to uncover the footprints can be considered as a sustainable way to treat these exceptional remains.

At Olduvai Gorge, the mission was shown architectural plans for a podium to be constructed at the *FLK-Zinjanthropus* archaeological site. *FLK-Zinjanthropus* is one of the most important sites of its time period, and the podium was designed to commemorate the 50th anniversary of the discovery of the *Zinjanthropus* cranium. The plans include walkways to be constructed directly on top of the fossil deposits, stone walls built directly against the fossil outcrops and trees planted at the base of the site. The supplementary information provided by the State Party on 26 February 2010 explains that the experts who participated in the international conference in the 50th anniversary year did not approve the drawings because they *'could irreversibly damage the site'.* The consultant has been asked to revise the plans. A meeting is planned for the consultants, experts from the archaeology Unit of the University of Dar es Salaam, the National Museums of Tanzania and the Antiquities department to discuss the revised drawings in March 2010.

It is stated that '*As a matter of principle, ICOMOS will get a copy of the details for the envisaged interventions after the experts and other stakeholders are convinced that the concept is understood and the consultant has made drawings that truly represent the concept'*.

ICOMOS remains concerned that the overall concept of a podium on this site is fundamentally inappropriate and could irreversibly damage the site. As with the Laetoli site, ICOMOS considers that approval in principle to the

approach to presenting this site must be reached before any designs are conceived and to this end plans should be submitted to ICOMOS and the World Heritage Committee, in line with the requirements of *Operational Guidelines* paragraph 172, before any commitment is made. ICOMOS considers that it is unlikely that constructions directly on the site where the finds were made could be seen as acceptable.

The supplementary information also stated the MNRT had received a proposal from a local research institution for the establishment of a multifunctional paleo-anthropological Field Station at Olduvai Gorge. This will involve construction of structures and a camp site. The directorate of Antiquities is studying the proposal and it will be discussed at a stakeholders' meeting planned for March 2010. No details are provided as to the location or size of this development. As with other developments in this highly sensitive area, details of the proposals would need to be submitted for scrutiny by ICOMOS and the World Heritage Committee, in line with the requirements of *Operational Guidelines* paragraph 172, before any commitment is made.

Agriculture/pastoralism

Due to increased Maasai populations, declining livestock populations and food scarcity, many of the Maasai pastoralists have converted to an agro-pastoralist lifestyle. Agriculture is technically not permitted within the Ngorongoro Conservation Area, although small-scale agricultural plots are present. Agricultural plots have encroached upon the Laetoli fossil locality (some 300 to 400 metres from the fossil deposits).

Maasai pastoralists bring their livestock into the Olduvai gorge to access water. Large herds of sheep, goats, and cattle, were observed by the mission, despite the fact that livestock are prohibited by the NCAA from entering the site. This promotes unnecessary erosion and trampling/destruction of fossils and artefacts on the surface of the fossil deposits. The negative effects of this are undisputable. For example, the OH-16 cranium of *Homo habilis*, discovered in 1963, was trampled by cattle just prior to its recovery and much of it destroyed. Numerous livestock trails are evident across the fossil deposits, promoting erosion beyond what is typical of natural causes.

ICOMOS considers that the authorities are not taking satisfactory efforts to remedy the situation.

Nasera Rock Shelter is presently serving as a corral for Maasai livestock. The archaeological deposits have suffered from trampling and mixing of the uppermost archaeological deposits. As a result, numerous artefacts and bones are presently exposed subjected to trampling damage. In addition, the rock shelter walls are covered in graffiti, some of which overlays faded rock art. This irreversible damage is destroying the integrity of the archaeological material. Although the site is legally protected under the Antiquities Act, protection of the site is not enforced and plans are not underway to curb the ongoing damage.

Mining

Mining is prohibited within the NCA. During the technical evaluation mission, however, it was noted that gravel pits had been excavated within the NCA to provide road materials. If these extractions were to take place near archaeological localities, the damage would be severe. The excavations have not been rehabilitated and preventative measures do not appear to be underway.

Tourism pressures

Tourism pressure remains a problem within the Ngorongoro Crater and pose a certain threat to the natural resources of the NCA, although less so with respect to the cultural resources. The NCAA plans to alleviate tourism pressure within the crater by promoting areas outside the crater, particularly the paleoanthropological resources. If these efforts are successful, and increasing numbers of tourists visit the paleoanthropological sites, there is potential for damage to occur (e.g., vandalism, removal of archaeological materials).

There is conflict between the Maasai pastoralists and hotels/campsites, both of which require access to water and land. According to the Maasai Pastoralist Council (MPC), previously constructed tourist lodges have restricted the availability of grazing lands and water sources. There is currently no forum that allows for stakeholders in the tourist industry, particularly those who manage lodges within the NCA, to communicate with the NCAA. This is at odds with one of the stated objectives of the NCAA, which is to promote tourism.

Environmental pressures

The primary environmental threat to the fossil localities is erosion, resulting from natural process. For example, heavy rains can promote high levels of erosion of fossil deposits. This is likely to happen, and it has been happening throughout geologic history. This is not necessarily a problem however, as these natural processes have been operating on the fossil localities since they were formed. Furthermore, erosion plays a critical role in the scientific value of the fossil localities as paleoanthropologists rely on natural erosion to expose fossil material.

Naturally occurring fire is managed by the NCAA (e.g., through prescribed burning and fire breaks). Fires caused by the local people pose a serious threat to the natural resources of the NCA, and possibly to the Maasai people and livestock. The potential damage to the paleoanthropological resources is relatively low, since they remain buried. The mission observed several intentionally set fires associated with the clearing of land for agricultural purposes. Such fires are prohibited within

the NCA, although enforcement of the rules appears to be lax.

Drought remains an ongoing threat to the Maasai people of the NCA. The technical evaluation mission coincided with a severe drought that has had devastating consequences on the Maasai throughout East Africa. Water shortages threaten livestock populations, which in turn threatens the livelihood of the Maasai people. Such droughts are likely to continue in the future, and long-term climatic forecasts suggest their frequency and severity will increase. Obviously preventative measures cannot be taken, but ICOMOS considers that it would be wise for the State Party to develop plans for delivering water to the Maasai people and their livestock in the future.

Natural disasters

Natural disasters identified by the State Party include earthquakes, floods, and wildfire. Earthquakes are likely to happen, although they do not pose a serious threat to cultural resources of the NCA. Flooding is unlikely outside of Ngorongoro crater, and poses a minimal threat to the cultural resources. Wildfire poses minimal threat to the paleoanthropological resources of the area, since the fossil landscapes remain buried. However, severe wildfire could potentially create problems for the Maasai people. The NCAA is responsible for managing wildfire (e.g., through firebreaks and prescribed burns). ICOMOS considers that natural threats have been satisfactorily addressed by the authorities to the extent they can.

Population Pressure

Population pressure remains one of the largest threats to the Maasai culture. The most recent census data places the Maasai population within the NCA at approximately 64,000 people, and the historic trend has been for the population to increase in recent decades. Populations are increasing largely because nearby Maasai people are moving into the NCA, where there is improved access to medical care, veterinary care, schools, etc. The traditional nomadic pastoralist lifestyle is unable to support the growing population. As a result, increasing numbers of Maasai are turning to agriculture and practicing a more sedentary, non-traditional lifestyle. The effects of increasing populations are particularly evident in the large number of non-traditional, permanent structures within the Maasai villages, which are beginning to resemble informal settlements/shantytowns. Preventative measures to curb the population growth do not exist and ICOMOS considers that this threat has not been satisfactorily addressed by the authorities. IUCN concurs with this view and notes that: *"The lifestyle of the Maasai is under pressure of change. Adoption of settled agriculture and difficulties in maintaining a nomadic lifestyle are a clear reality for the Maasai communities living in Ngorongoro. The absolute numbers of people living in the crater is also a key issue."*

Impact of climate change

The drought mentioned above could be related to climate change.

ICOMOS considers that the main threats to the cultural attributes of the property are proposed inappropriate development at Laetoli and Olduvai, which constitute a major danger to the integrity, authenticity and Outstanding Universal Value of the property in relation to cultural criteria, the lack of enforcement of regulations relating to the use of land at and near archaeological sites, over-population, and the lack of a pastoralism/grazing strategy.

5. PROTECTION, CONSERVATION AND MANAGEMENT

Boundaries of the nominated property and buffer zone

The boundaries of the NCA are clearly delineated and the nominated property includes all the attributes required to express the potential Outstanding Universal Value of the property related to the paleoanthropological resources (although these remain to be more clearly defined).

A buffer zone has not been proposed as the State Party considers that the substantial size of the property and the protected areas it adjoins give adequate protection.

ICOMOS considers that this is reasonable as the paleoanthropological and cultural resources are well protected within the boundaries of the NCA. However, there is potential risk in the south-east boundary of the NCA, near the town of Karatu. This area is presently dedicated to agriculture and pastoralism. Any shifts in land-use strategies could pose a potential threat to the NCA.

ICOMOS considers that the boundaries of the nominated property are adequate and protected areas around the edge of the nominated property provide an adequate buffer area apart from in the south-east.

Ownership

The nominated property is owned by the Ngorongoro Conservation Area Authority, a government owned agency.

Protection

Legal Protection

The paleo-anthropological resources are protected under the Antiquities Act of 1964 (amended 1979). The

Act essentially makes it illegal to damage or remove cultural antiquities, which includes those sites within the NCA. The Antiquities Act provides the highest level of legal protection possible within the country and this protection is afforded to known archaeological resources and any sites that might be discovered in the future. Enforcement of the Antiquities Act is the responsibility of the Division of Antiquities.

A revised national policy on the protection of cultural antiquities is presently under development.

Olduvai Gorge is the only site with clearly defined boundaries, given the unique geologic context of the gorge. The boundaries for the Olduvai Gorge sub-zone extend 5km from the gorge in any direction, although they are not clearly delineated on the landscape. The entire sub-zone is protected under the Antiquities Act.

Laetoli and Lake Ndutu fossil localities are buried fossil landscapes, the boundaries of which are not clearly defined. The extent of the fossiliferous deposits is unknown, although geologic maps or a focused survey of the sites could help define boundaries. Distinct boundaries for Nasera Rock Shelter and Ngorongoro Burial Mounds are also lacking.

ICOMOS recommends that the State Party develop specific boundaries for sites at Laetoli, Lake Ndutu, Nasera, and for the Ngorongoro Burial Mounds, and for their surrounding sensitive landscape, to ensure their protection, conservation, management and monitoring. ICOMOS also recommends that further areas that are archaeologically sensitive be clearly defined.

There is no formal protection for sustaining Maasai traditions, such as communal grazing and traditional house construction.

Enforcement of existing legal protection is lacking to some degree. As noted above, the mission observed livestock in Olduvai Gorge, a corral and graffiti in Nasera Rock Shelter, and agricultural plots in the immediate vicinity of Laetoli (and throughout the NCA). The permissive atmosphere within the NCA is also evidenced by the open gravel pits used for road construction, numerous agricultural plots, and fires set to clear land for crops. All these practices are said to be forbidden within the NCA.

Traditional Protection

The Maasai people are said to have preserved their pastoral traditions while living in harmony with the wild game that migrate through the area. The NCAA relies on indigenous knowledge to maintain a healthy grazing regime throughout the NCA. However there is an absence of a pastoralism management strategy. ICOMOS considers that it remains unclear how these pastoral traditions are managed in relation to increasing population, to pressure on grazing resources, and to environmental issues such as shortage of water.

Effectiveness of protection measures

The legal protection in place for the paleo-anthropological resource is limited by the lack of delineation for most of the sites and by an apparent lack of enforcement, which means that many of the resources are under some degree of threat.

It is unclear whether population increase has militated against the viability of traditional protection practices. ICOMOS considers that there is a need for an overall pastoralism strategy.

ICOMOS considers that although the legal protection in place for the paleoanthropological resource is technically adequate its lack of enforcement is a source of concern. ICOMOS recommends that the State Party develop specific boundaries for Laetoli, Lake Ndutu, Nasera, and the Ngorongoro Burial Mounds to ensure their protection. ICOMOS considers that an overall pastoralism strategy is needed to inform whether traditional grazing practices can be sustained by traditional organisational practices and how these relate to the management of archaeological and natural attributes.

Conservation

Inventories, recording, research

The archaeological resources within the NCA have been well documented over decades of research by scientists. Nevertheless the documentation does not appear to be centrally located or readily available and has not been used to define the limits of the key sites or of other sensitive areas.

There is no inventory of Maasai settlements or bomas. ICOMOS recommends that the State Party conduct a detailed survey of the extent of Maasai villages and settlements. Additional details on the structures present within the settlements would be useful. Such information would provide a key baseline for monitoring any changes to their population and settlement strategies in the future.

Present state of conservation

The state of conservation of the various archaeological sites is variable. The sites within the Ngorongoro Crater and Lake Ndutu are in good condition; the Laetoli footprints are now stable after removal of tree roots and re-burial; the Olduvai Gorge site is under pressure from grazing, as is the Nasera Rock Shelter.

Active Conservation measures

Guidelines for the conservation of the archaeological resources are set forth in the Antiquities Act, although a revised national policy is in development. Nevertheless,

there does not appear to be any formal strategy for the conservation and management of individual sites.

ICOMOS considers that conservation plans or strategies are needed for each of the paleo-archaeological sites.

Maintenance

On-site Antiquities staff is present at Olduvai Gorge and Laetoli. These include two resident guards who are responsible for monitoring the fossil deposits at Laetoli and a number of local guides at Olduvai.

Effectiveness of conservation measures

The limited number of staff for the vast area of the nominated property, the remoteness of the main sites, the lack of their adequate delineation, and the lack of enforcement of regulations mean that overall the effectiveness of conservation measures is very limited.

ICOMOS considers that a conservation programme is needed to put in place necessary documentation, to develop conservation plans, to enforce regulations regarding grazing and to increase the number and knowledge of cultural heritage staff.

Management

Management structures and processes, including traditional management processes

The NCA is under the management of the NCAA. Their primary management objectives are to conserve the natural resources, protect the interests of the Maasai pastoralists, and to promote tourism. The Division of Antiquities is responsible for the management and protection of the paleoanthropological resources within the NCA. A memorandum of understanding is presently under development to formally establish the relations between the two entities. The NCAA Board of Directors includes representatives of the Division of Antiquities (as well as the MPC).

At present there is a large number of staff focused on the natural assets of the NCA. The NCAA lacks cultural heritage staff with training in the management of pastoralist communities. However, both the NCA and Division of Antiquities indicated that plans are underway to expand their staff to offset this imbalance.

Outside of setting regulations over which lands the Maasai are permitted to graze their livestock, there is no active strategy for the management of pastoralism within the NCA. The management strategy appears to be reactive, in terms of protecting the natural resources of the NCA. Within the Maasai community, the MPC is responsible for establishing grazing regimes, on the basis of traditional/indigenous knowledge.

One of the concerns identified during the course of the mission was the ever-growing Maasai population. In order to properly monitor and manage this situation, an important first step will be to thoroughly document the number of people inhabiting the NCA and the extent of their settlements. At the moment, there are no formal plans for managing/controlling the number of settlements and Maasai pastoralists are free to come and go as they please.

In recent years the number of Maasai people has increased, resulting in an increase in the ratio of people to livestock. This decline is encouraged by NCAA management, which is promoting a focus on higher quality livestock over higher quantities. To this end, the NCAA is responsible for providing veterinary service to the Maasai pastoralists.

However, the Maasai Pastoralist Council (MPC) is responsible for representing the needs of the Maasai People. A forum does exist for communication between the MPC and the NCAA. In addition, the chair of the MPC is also a member of the NCAA Board of Directors.

The NCAA has established a set carrying capacity for herbivores within the NCA at 250,000. This figure includes both livestock and wild animals. Over-grazing does take place, particularly near the Maasai settlements. The grazing regimes are managed by the MPC, which is responsible for protecting the interests of the Maasai people.

Policy framework: management plans and arrangements, including visitor management and presentation

The nomination dossier includes a Provisional Integrated Management Plan, 2006-2010 (although the text mentions a Plan for 2006-2016). This has five sections: Description of the property; Resources in the property; Goals and Objectives; Management programmes and Actions; and Implementation Strategy.

ICOMOS notes that the management plan tends to be orientated towards the natural environment in terms of the need for more research, managing biological diversity, and promoting conservation of critical habitats. The cultural objectives relate more to social issues and minimising human – wildlife conflicts. There are no objectives relating to documenting more adequately the cultural resources and investigating the potential of the wider landscape in archaeological terms. The management plan includes raising environmental awareness but not cultural awareness. The next review of the Plan needs to focus on cultural heritage and give it equal prominence and resources as natural heritage.

In terms of Implementation, the core strategy is said to be an ecosystem approach to environmental management. ICOMOS notes that there is no mention of integrating this with cultural objectives. The one area that does acknowledge the cultural resource is in the

land management zones into which the property is divided.

Neither the management plan nor the nomination dossier reflects the concerns of 2007 reactive monitoring mission by IUCN and WHC (reiterated by the World Heritage Committee at its 33rd Session (Seville, 2009)). This suggested the need to develop an overall tourism strategy for the property to guide public use and prioritize the quality of the tourism experience, not the quantity of visitors and tourism facilities.

IUCN notes that: *"many recommendations that have resulted from reactive monitoring missions to the property undertaken in 2007 and 2008 have not been implemented. [...] IUCN considers a central focus should be to ensure that the management body has the capacity, skills and resources to fulfil its role effectively. This role would potentially be redefined by the renomination of the property. The renomination, if accepted, would introduce new requirements for management of the property, in relation to the increased consideration of its cultural values. IUCN considers that a fully integrated management system would be required to ensure that there is an effective overall approach to the management of the property. This would need to consider natural and cultural aspects, and the interaction between them. Protection of the natural values of the property should continue to be a central objective in the management system for the property if recognized as a mixed site."*

Risk preparedness

Risk preparedness has not been formalised.

Involvement of the local communities

There is high involvement of the Maasai communities in the Conservation Area. However how this involvement can be managed in the future to ensure sustainable approaches to natural diversity, cattle grazing and conservation of the archaeological resources has yet to be resolved in any sort of formal way.

Resources, including staffing levels, expertise and training

The Conservation Area has 360 staff on site who are mainly trained in wildlife management, ecology and tourism, but with some having technical expertise. There are no cultural heritage trained staff on site. The Conservators and Assistant Conservator of Antiquities have training in archaeology and/or cultural heritage management.

Effectiveness of current management

The current management is geared to the conservation of natural resources, tourism and to a degree the resolution of conflict with the Maasai people. There needs to be a greater weight given to the active conservation of cultural resources, both the archaeological sites and the Maasai grazing lands.

ICOMOS considers that special attention is needed to focus attention on proactive management of the cultural heritage resource through the development of strategies for the archaeological sites, for the grazing lands, for the overall pastoral system and for tourism. In conclusion, ICOMOS considers that the management system for the property should be extended to include these strategies, and the staff augmented with more people with cultural heritage backgrounds.

6. MONITORING

Monitoring is undertaken by the NCAA with the Antiquities Division. No indicators are set out for the monitoring process nor is the regularity of the process given.

ICOMOS considers that a monitoring scheme needs to be developed targeted at the cultural attributes of the property.

7. CONCLUSIONS

In terms of the extraordinarily rich paleoanthropological resources in the Conservation Area, the nomination dossier was found to contain insufficient information to document these adequately. Given the wealth of existing literature related to the many years of examination these sites have had, this is disappointing.

Detailed plans and maps are needed of the paleo-anthropological resources of the NCA. The location of finds from all paleoanthropological sites also should be set out.

ICOMOS considers that there are serious and specific threats to the authenticity, integrity and Outstanding Universal Value of the property from proposals to open the Laetoli footprints to the public, and to construct a podium on the site of the discovery of the *Zinjanthropus* cranium. The supplementary information provided by the State Party indicates that both of these proposals are still active. ICOMOS considers that the current proposals should not be progressed and that the overall approach to the presentation of both sites needs to be re-considered, in order to ensure that the scientific value of the paleo-archaeological remains in and around both sites are protected in the long term as is their potential for future research. Any plans for their development should be submitted for appraisal by ICOMOS and the World Heritage Committee, in line with the requirements of *Operational Guidelines* paragraph 172, before any commitment is made.

Furthermore, ICOMOS considers that it is highly unlikely that proposals to uncover the footprints, or to construct a

monument on the site of the discovery of the *Zinjanthropus* cranium could be considered as sustainable ways to treat these exceptional remains.

ICOMOS also considers that there is concern over the state of conservation of individual sites, the lack of conservation strategies, the enforcement of regulation relating to land-use, the lack of staff trained in cultural heritage and the lack of an overall pastoralism grazing strategy related to the increasing population.

Overall the management system for the property is currently geared towards the conservation of natural resources and to the management of game tourism. If the cultural resources that are of Outstanding Universal Value are to be recognised as being of equal significance with the natural resources already recognised as being of Outstanding Universal Value, there is a need for a much better balance to be put in place between the needs and management of the natural resources and those of the cultural resources.

Although ICOMOS considers that the pastoral traditions of the Maasai in the property are waning, that they apply to only a comparative small area, and that the grazed landscape cannot be said to represent the more widespread Maasai pastoralist tradition, nor to be of Outstanding Universal Value, nonetheless ICOMOS considers that these areas need to be managed through the development of a pastoralism strategy in order that they are sustainable in relation to the natural and human attributes and that the management particularly respects their palaeo-anthropological cultural resources.

Although ICOMOS considers that the property has the capacity to justify criterion (iv) for its paleo-archaeological interest, its authenticity, and integrity are at the moment extremely vulnerable, protection is not being enforced, detailed conservation strategies are needed, there is lack of adequate delineation for the paleo-archaeological sites and sensitive landscapes, a pastoralism strategy needs to be put in place and most fundamentally two of the sites, Laetoli and the *Zinjanthropus* site in Olduvai are under potential threat from proposed developments that could damage irreversibly their paleo-archaeological record.

As the property is already inscribed on the World Heritage List under natural criteria, and as ICOMOS considers that there is an urgency to address the vulnerabilities of and threats to the cultural attributes, and to put in place a more sustainable management of the overall landscape, it is recommending that the property be inscribed under an additional cultural criterion as a relict cultural landscape, and at the same time be inscribed on the List of World Heritage in Danger. It recalls paragraphs 178 and 179 of the *Operational Guidelines*, which set out that a property can be inscribed on the List of World Heritage in Danger by the Committee when it finds that the property is faced with specific and proven imminent danger, such as significant loss of historical authenticity and important loss of cultural significance.

ICOMOS considers that ~~in~~ Danger listing should be seen as a way of helping to mobilise resources to address the management, conservation and potential development problems, and particularly to ensure that the current proposals for Laetoli and Olduvai are re-assessed and do not go ahead in their present form or with their present approach. Its proposed inscription as a relict cultural landscape does not mean that the involvement of the Maasai pastoralists in the property is being ignored. Although the landscape cannot be seen to be of Outstanding Universal Value as an evolving pastoral landscape, the pastoral traditions need to be managed to allow them to co-exist with natural and archaeological attributes and to this end the management system needs to give greater respect to cultural aspects of the property.

Recommendations with respect to inscription

ICOMOS recommends that the request to inscribe Ngorongoro Conservation Area, United Republic of Tanzania, under additional cultural criteria on the World Heritage List should be approved on the basis of ***cultural criterion (iv)***.

ICOMOS further recommends, recalling paragraph 179 of the *Operational Guidelines*, that, as the property is potentially threatened by serious and specific dangers arising from proposals to open the Laetoli footprints and to construct a monument on the site of the discovery of the *Zinjanthropus* cranium, the Ngorongoro Conservation Area, United Republic of Tanzania, should immediately be inscribed on the ***List of World Heritage in Danger.***

ICOMOS also recommends that the State Party invite a mission to the property to agree a desired State of Conservation for the removal of the property from the List of World Heritage in Danger, based on the cultural attributes of Outstanding Universal Value and to be reached through a revision of the management system and Plan.

ICOMOS additionally recommends that the State Party give urgent consideration to the following:

- Re-assess proposals for the presentation of the Laetoli footprints and the proposed new museum building so that the footprints are not exposed to public view and no construction takes place near the site;

- Re-assess proposals for a monument at the *Zinjanthropus* site at Olduvai Gorge, so that no construction takes place on or near the archaeological sites, in order to protect their scientific evidence and their potential for future research;

- Keep the World Heritage Committee informed on any proposals for construction at these two sites before any commitments are made, in accordance with paragraph 172 of the *Operational Guidelines;*

- In order to set out a clear basis for the value of the resource, and its conservation and management needs, provide:

    - Details on the specific area and location of the palaeo-anthropological resources, including specific boundaries for Laetoli, Lake Ndutu, Nasera, and the Ngorongoro Burial Mounds, and for their sensitive settings, to ensure their protection;

    - Details of sensitive archaeological landscape throughout the property;

    - Details of the location of finds from all paleoanthropological sites;

    - Conservation plans for all paleo-anthropological localities;

    - A revised management plan that gives a higher profile to the management of cultural resources and sets out how regulations will be enforced; and includes a pastoralism strategy that respects both natural and cultural resources, involves the Maasai communities and defines a sustainable approach to managing the grasslands.

Recommended Statement of Outstanding Universal Value

ICOMOS notes that this proposed Statement will need to be integrated eventually with a retrospective Statement of Outstanding Universal Value for the natural criteria already recognised.

Brief synthesis

The Ngorongoro Conservation area spans vast expanses of highland plains, scrub-bush, and forests, from the plains of the Serengeti National Park in the north-west, to the eastern arm of the Great Rift Valley, It encompasses the spectacular Ngorongoro Crater, the world's largest collapsed volcanic crater, with its enclosed grazing areas, and Olduvai Gorge, a 14km deep ravine.

The area has been subject to extensive archaeological research for over 80 years and has yielded a long sequence of evidence of human evolution and human-environment dynamics, collectively extending over a span of almost four million years to the early modern era. This evidence includes fossilised footprints at Laetoli, associated with the development of human bipedalism, a sequence of diverse, evolving hominin species within Olduvai gorge, which range from Australopiths such as *Zinjanthropus boisei* to the *Homo* lineage that includes *Homo habilis*, *Homo erectus* and *Homo sapiens;* an early form of *Homo sapiens* at Lake Ndutu; and, in the Ngorongoro crater, remains that document the development of stone technology and the transition to the use of iron. The overall landscape of the area is seen to have the potential to reveal much more evidence concerning the rise of anatomically modern humans, modern behaviour and human ecology.

Criterion (iv): Ngorongoro Conservation Area has yielded an exceptionally long sequence of crucial evidence related to human evolution and human-environment dynamics, collectively extending from four million years ago to the beginning of this era, including physical evidence of the most important benchmarks in human evolutionary development. Although the interpretation of many of the assemblages of Olduvai Gorge is still debatable, their extent and density are remarkable. Several of the type fossils in the hominin lineage come from this site. Furthermore, future research in the property is likely to reveal much more evidence concerning the rise of anatomically modern humans, modern behaviour and human ecology.

Integrity and authenticity

The property encompasses not only the known remains but also areas of high archaeo-anthropological potential where related finds might be made.

However the integrity of specific paleo-archaeological attributes and the overall sensitive landscape are to an extent under threat and thus vulnerable due to the lack of enforcement of protection arrangements related to grazing regimes, and from proposed access and tourist related developments at Laetoli and Olduvai Gorge.

In general, the authenticity of the fossil localities is unquestionable, however given the nature of fossil sites, the context for the fossil deposits need to remain undisturbed (except by natural geological processes). As the nomination dossier does not contain sufficient detailed information on most of the sites to delineate their extended areas or the areas of archaeological sensitivity, or sufficient guarantees in terms of management arrangements to ensure that the sites will remain undisturbed and not threatened by visitor access, construction or grazing cattle, their authenticity is vulnerable

Management and protection requirements

The property is under the management of the Ngorongoro Conservation Area Authority (NCAA). Their primary management objectives are to conserve the natural resources, protect the interests of the Maasai pastoralists, and to promote tourism. The Division of Antiquities is responsible for the management and protection of the paleoanthropological resources within

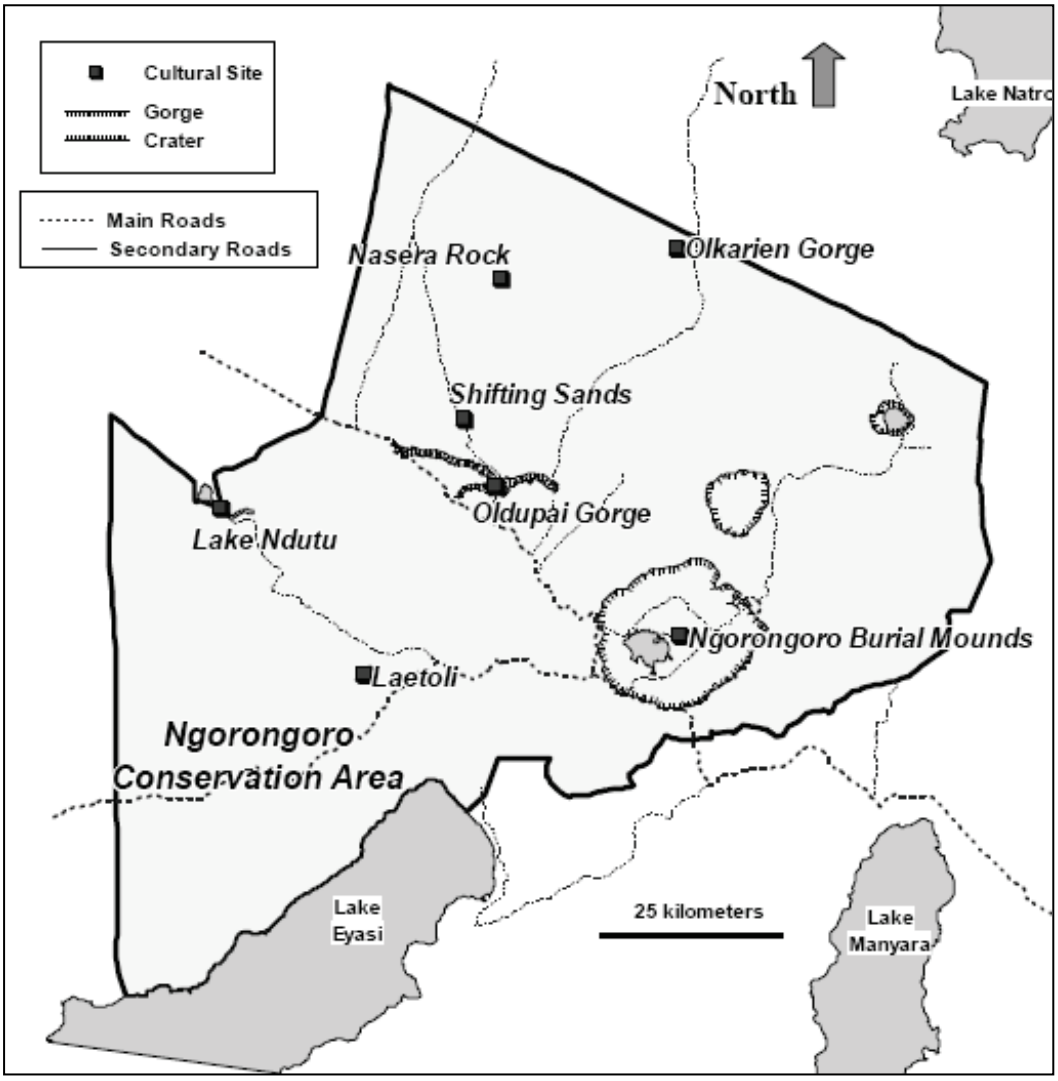
the Ngorongoro Conservation Area. A memorandum of understanding is presently under development to formally establish the relations between the two entities.

The NCAA lacks cultural heritage staff with training in the management of pastoralist communities. However, both the NCA and the Division of Antiquities indicate that plans are underway to expand their staff to offset this imbalance.

The property has an overall provisional Management Plan but this has limited cultural objectives that relate more to social issues and minimising human – wildlife conflicts, than to documenting, conserving and managing the cultural resources and investigating the potential of the wider landscape in archaeological terms. The Plan includes raising environmental awareness but not cultural awareness.

In terms of implementation, the core strategy is said to be an ecosystem approach to environmental management. There is no mention of integrating this with cultural objectives in order for instance to have a sustainable approach to the management of grasslands and the archaeological resource.

There is an urgent need to extend the management system and the Management Plan to encompass an integrated cultural and natural approach in the short, medium and long terms and to strengthen staff to include appropriately qualified cultural officers.



Map showing the boundaries of the nominated property

Olduvai Gorge

Laetoli site,
footprints of three *Australopithecus afarensis*

2

Maasai pastoral landscape

Maasai dwellings