NATIONAL MUSEUMS OF KENYA

WHERE HERITAGE LIVES ON

REF: NMK/UN/2/1

5th March 2020

Director,
World Heritage Centre UNESCO
7, Place de Fontenoy, 75352 Paris CEDEX 07
France

Dear Dr. Rossler,

RE: STATE OF CONSERVATION REPORT FOR LAKE TURKANA NATIONAL PARKS WORLD HERITAGE SITE (N 801 BIS)

I herein submit the State of Conservation Report for Lake Turkana National Parks World Heritage Site which was listed on the World Heritage in danger 2018. The State Party had hoped that the Joint WHC/IUCN Reactive Monitoring Mission would precede and thereafter a comprehensive SOC report. would be submitted. Kenya therefore deeply regrets that this State of Conservation Report was not submitted as requested in decision 43 COM 7A.12.

Yours sincerely,

Dr. Purity Kiura,

Director of Antiquities Sites & Monuments

For: Director General

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LAKE TURKANA NATIONAL PARKS (KENYA) (N 801 BIS)

KENYA STATE PARTY REPORT ON THE STATE OF CONSERVATION FOR THE LAKE TURKANA NATIONAL PARKS WORLD HERIATG PROPERTY MARCH 2020

Executive summary

This is a state of conservation report of Lake Turkana National Parks World Heritage Property that was inscribed on the World Heritage List in 1997 and placed on the List of World Heritage in Danger during the 42nd session of the World Heritage Committee held in Bahrain in 2018 vide WHC Decision: 42 COM 7B.92. The State Party of Kenya has rolled out several activities focusing on addressing the critical issues regarding protection of the World Heritage Property. This includes scientific studies and bilateral engagements with the State Party of Ethiopia regarding the Gibe Projects.

An Environmental and Social Impact Assessment Study (ESIA) for the proposed Lamu-Lokichar Crude Oil Pipeline was carried out in 2019 and results submitted to relevant stakeholders and government agencies for review. The study was conducted in all the six counties through which the pipeline is proposed to transverse. Prior to the commencement of the study, the National Museums of Kenya (NMK), the Kenya Wildlife Service (KWS), and the State Department of Fisheries among other stakeholders were incorporated in disclosure workshops.

The proposed SEA for the Omo-Lake Turkana Basin has however continued to face challenges due to lack of consensus between the two state parties of Ethiopia and Kenya in agreeing on the budget and funding sources. A proposed budget was prepared and submitted by the State Party of Kenya to Ethiopia in May 2019, but there has been no response to the proposal. It should be noted that the two States Parties have different governance structures and legislations including those that govern environmental matters. This therefore means the two state parties have different operation procedures, especially on matters relating to procurement and environmental assessments, this has hampered the progress on how the SEA should be undertaken. The desire to give mutual respect for respective operating procedures, differing laws and to diplomatically agree on divergent issues therefore continues to affect the time taken to achieve a single milestone.

The State Party of Kenya finalized the development of the Lake Turkana National Parks Management Plan 2018-2028. The document was co-signed in December 2018 by the Directors of both KWS and the NMK. The State Party of Kenya wishes to restate that the Kenya Wildlife Service (KWS) has already initiated implementation of Action Plans set out in the plan. One of these is the national recovery action plan for Giraffe dubbed: *the Recovery and Action Plan for Giraffe (Giraffa camaeleopardis) in Kenya 2018-2022.* The recovery action plan covers the three recognized subspecies of Giraffe (*G.c. tippelskirchi, G.c. rothschildi and G.c. reticulate*) all of which are found in Kenya. Monitoring has been enhanced to conduct tracking, breeding and movement of the Grevys Zebra and other herbivores, birdlife and the big cats such as lions in all conservation areas.

As concerns the Lake Turkana Wind Power Project which has already been commissioned, the investor is closely monitored by Environmental Advocacy groups and will also be monitored through periodic environmental audits as stipulated by the EMCA Act. In addition, NMK has been and continue to be involved with the Heritage Impact Assessment of this project.

Decision: 43 COM 7A.12

Lake Turkana National Parks (Kenya) (N 801 bis)

The World Heritage Committee,

1. Having examined Document WHC/19/43. COM/7A,

2. Recalling Decisions 39 COM 7B.4, 40 COM 7B.80 and 42 COM 7B.92, adopted at its 39th (Bonn, 2015), 40th (Istanbul/UNESCO, 2016) and 42nd (Manama, 2018) sessions respectively,

3. Acknowledge the State Party of Kenya's efforts to implement the newly approved Management Plan for 2018-2028, and requests the State Party to submit it and the Action Plans, to the World Heritage Centre, together with details of its implementation;

Response: Regarding the Lake Turkana Management Plan (LTNP) 2018-2028, the following are the key elements of the action plan that the State Party of Kenya has started implementing**.**

a. Mapping and monitoring bird species
   See Bird Monitoring Report attached as annex 1.

b. Developing a monitoring program for grevy's zebra
   i) Approved National Grevy's zebra strategy in place
   ii) Prepared Grevy's zebra monitoring plan for Northern Kenya range areas including Marsabit County,
   iii) Second Grevy's Zebra rally (that's survey and census) conducted in January 2020 first GGZR, 2016 report in place
c. Establishment of a carnivore monitoring program
   i) Approved National Lions and Hyaena strategy (2019-2024), National cheetah and wild dogs strategy (2019-2024) under implementation
   ii) National Lions survey conducted in 2019, since July 2019 – to date ongoing around Sibiloi NP
   iii) Hyaena and cheetah survey project in Sibiloi NP under implementation
d. Creation of an ecological monitoring database for the Lake Turkana National Parks (LTNPs)
   i) Baseline report of species inventories and habitat profiles (incl. mammals, birds, itchthyofauna, herpetofauna, higher plants, niche ranges, (Mt. Kulal)- forest land use land cover changes) for Sibiloi NP and South Isl. NP/Mt. Kulal forest –

MABR; proposal for survey of crocodiles around South Island NP, Central NP, L. Turkana river deltas compiled

ii) Lake water levels monitoring on USDA observatory platform (very reliable) and Limnology surveys ongoing

e. Conducting a wildlife survey to establish a baseline (preliminary results attached)
   i. Conducting a wildlife survey to establish a baseline (preliminary results attached)

   ii National giraffes strategy (2018-2022) in place

f. Holding regular meetings with community group leaders on group management.
   i) Park Warden in collaboration with development partners conducts such workshops (evidential reports available)

   ii) Regular KWS-community consultative control operations of livestock activities ongoing (evidential data in place)

4. Deeply regrets the continued lack of a consolidated response by the States Parties of Kenya and Ethiopia to the Committee's past requests, and reiterates its request to the States Parties of Kenya and Ethiopia to provide a consolidated response on their progress to address the outstanding 2012 and 2015 mission recommendations as well as an update on the current status of the impounding of the Gibe III reservoir, and any mitigation measures being implemented;

Response: The State Party of Kenya wishes to point out that it has been responding to issues that occur on her territory. It finds it a challenge to report on the progress of development projects being undertaken in a neighbouring State Party especially where bilateral meetings on the issue affecting the property have been irregular.

The State Party of Kenya however wishes to reiterate that the recommendations of the 2012 and 2015 RMM have been taken into account in the Lake Turkana Management Plan. The State Party of Kenya has previously updated the World Heritage Committee on the progress of the development of the Terms of Reference (TORs) for the proposed SEA study, the appointment of a Joint Experts Panel (JTEP) and its TORs as well as the preparation of the tendering document for the call for proposal for the SEA consultancy. The outstanding challenge has been in the agreement between two State Parties of Ethiopia and Kenya on the SEA budget and funding sources.

5. Also regrets that the Strategic Environmental Assessment (SEA) to assess the cumulative impacts of the multiple developments in the Lake Turkana Basin on the Outstanding Universal Value (OUV) of the affected properties continues to be delayed;

Response: The State of Kenya notes the concern and also shares the concern that the OUV of the Lake Turkana Property continue to be at risk and that the proposed SEA is

long overdue. The proposed SEA for the Omo-Lake Turkana Basin has continued to face challenges due to lack of consensus between the two State Parties of Ethiopia and Kenya in agreeing on the budget and funding sources. A proposed budget had been prepared and submitted by the State Party of Kenya to the State Party of Ethiopia in May 2019, but there has been no response by the latter on the proposal.

The State Party of Kenya wishes to state that it was never intended that there would be such a delay that would gravely affect the timelines for commissioning the SEA study. It should however be noted that two States Parties have different governance structures and legislations that operate in very different ways including environmental matters. For any action proposed by one State Party, there is a corresponding need to receive and agree the views of the other before a consensus can be reached for any progress to be made. The desire to give mutual respect for respective operating procedures, differing laws and to diplomatically agree on divergent issues therefore continues to affect the time taken to achieve a single milestone.

This challenge will however need to be unlocked as the OUV of the Lake Turkana property continues to be exposed to negative impacts.

6. Welcomes the reported proposal by UN Environment to assist with the development of the overdue SEA, strongly urges the States Parties of Kenya and Ethiopia to cooperate in this process, and also requests the States Parties of Kenya and Ethiopia, with the collaboration of UN Environment, to undertake the SEA in conformity with the Committee's past decisions and the IUCN and ICOMOS guidance on impact assessments, to report on the projected timeline and progress in undertaking the SEA, and to submit the draft SEA to the World Heritage Centre for review by IUCN as soon as it is available;

Response: Kenya wishes to inform that through diplomatic channels, the two State Parties have been in bilateral communication under the transboundary shared water resources to agree on the modalities and appropriate time for the indicated willingness by UNEP to fund the SEA process and Study. A desired tripartite meeting between Kenya, Ethiopia and UNEP has however never been held though much anticipated. The State Party of Kenya wishes to point out that it is open to any technical or support by UNEP in fast tracking the SEA commissioning and a seamless completion of the study.

7 Notes the ongoing revision of the SEA for Lamu Port-South Sudan-Ethiopia Transport Corridor Project (LAPSSET), the Environmental and Social Impact Assessment (ESIA) for the Lamu-Lokichar Crude Oil pipeline from Turkana county to Lamu and the proposed development of the geothermal power station at the Barrier Volcanic Complex south of the property and further requests the State Party of Kenya, in accordance with Paragraph 172 of the Operational Guidelines, to submit ail related impact assessments

of projects, which may have potential impacts on the property, to the World Heritage Centre for review by IUCN, before taking any decision that may be difficult to reverse;

Response: The Environmental and Social Impact Assessment Study (ESIA) for the Lamu-Lokichar Crude Oil Pipeline was conducted in all the six counties through which the pipeline is proposed to traverse. The pipeline is proposed to start in Turkana County then traverse through the counties of Samburu, Isiolo, Meru, Garissa and terminate in Lamu. Kenya wishes to confirm that the ESIA consultant got in touch with the National Museums of Kenya (NMK), the Kenya Wildlife Service (KWS), the State Department of Fisheries and other stakeholders during disclosure workshops and were consulted in their diverse areas of interest and concern. The ESIA was conducted and results submitted to the National Environmental Management Authority (NEMA) in 2019. The ESIA is under validation with all the interested parties going through the ESIA document to submit their evaluation to NEMA before any license can be issued.

NMK was also involved in scoping studies covering the entire length of the proposed crude oil pipeline. The areas of interest to the NMK have been potential fossil fields, archaeological assemblages including old and fresh burial sites, community watering spots, sacred sites and in areas of important biodiversity spots.

In addition, the previous LAPSSET SEA study had recommended for revision of the same and the consultant had already commenced the revision work with wide consultations with the stakeholders. The LAPSSET SEA however is not yet complete.

8. Recalling Decision 42 COM 7B.92 Paragraph 6, adopted at its 42nd session (Manama, 2018), welcomes the commitment of the State Party of Ethiopia to undertake an Environmental Impact Assessment (EIA) on the Kuraz Sugar Development Project, including a comprehensive assessment of potential downstream impacts on the OUV of the property, and requests the EIA to be submitted for review by the World Heritage Centre and the Advisory Bodies by 31 December 2019;

Response: Kenya is also interested in the results of such an EIA for the Kuraz Sugar Development Project.

9. Whilst noticing the State Party of Kenya's request to postpone the joint World Heritage Centre/IUCN Reactive Monitoring mission to the property until 2020 once the SEA is at more advanced stage, considers that the mission should be undertaken as soon as possible to provide an up-to-date assessment on the state of conservation of the property under potential severe threat;

Response: After the adoption of the decision 43 COM 7A.12, the State Party of Kenya was ready for the Reactive Monitoring Mission in December 2019, but this was postponed at the request of the World Heritage Centre.

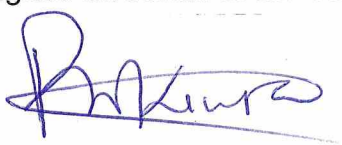
10. Reiterates its request to the State Party of Kenya to invite a joint World Heritage Centre/IUCN Reactive Monitoring mission to the property to assess the property's state of conservation, to review the impacts of the development projects in Ethiopia and Kenya on the property and the progress made to implement the past mission recommendations, and to develop, in consultation with the State Party of Ethiopia, a proposed set of corrective measures and a Desired state of conservation for the removal of the property from the List of World Heritage in Danger (DSOCR), for examination by the Committee at its 44th session in 2020;

Response: Though delayed, Kenya welcomes the prospects of development of a Desired State of Conservation for the removal of the property from the List of World Heritage in Danger (DSOCR) with workable measures following the guidance of the joint WHC/IUCN Reactive Monitoring Mission Experts.

11. Final requests the State Party to submit to the World Heritage Centre, by 1 February 2020, an updated report on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 44th session in 2020; 12. Decides to retain Lake Turkana National Parks (Kenya) on the List of World Heritage in Danger

Response: Kenya regrets that this State of Conservation Report was not submitted as stipulated. The State Party had hoped that the Joint WHC/IUCN Reactive Monitoring Mission would precede and thereafter a comprehensive SOC report would be submitted.

Signed on behalf of the State Party:



Dr. Purity Kiura,

Director of Antiquities Sites & Monuments

For: Director General

ANNEXES

ANNEX 1: Birds Monitoring Report

ANNEX 2: A signed Lake Turkana Management Plan

ANNEX 1: Birds Monitoring Report

The birds of Sibiloi National Park and the eastern shores of Lake Turkana: A report by

Musina, J., Mwema, M., Lomeiku, S. and Harris, J.

Introduction

Lake Turkana is considered one of the most important wetlands in East Africa because its shores are believed to hold more wintering wading birds than all the other Kenyan Rift Valley lakes. Huge congregations of over 220 000 waterbirds have been previously been recorded in Lake Turkana. It is these congregations of waterbirds that make the lake internationally recognized as an Important Bird Area.

On the northeastern shore of Lake Turkana, is Sibiloi National Park. This park was established in 1973 by the Government of Kenya for the protection of wildlife and palaeontological sites. Therefore, it is internationally known for its fossils with the most famous remains being those of Australopithecus and early Homo fossils. In 1997, Sibiloi National Park was listed as a UNESCO World Heritage Site.

Due to size and harsh climate of northern Kenya, there have not been any recent systematic bird surveys in this area. From 17th October to 2nd November 2016, we carried out a baseline survey of the birds along the eastern shoreline of Lake Turkana and parts of Sibiloi National Park. We were based at the Koobi Fora National Museums Kenya (NMK) camp just north of Koobi Fora Museum. On the lake shore, we surveyed the Koobi Fora Spit near the NMK camp, Kokai, Illeret and Allia Bay. In Sibiloi National Park, we surveyed Lagga Mchanga, Lagga Simba, Mt Sibiloi and sections of the road between Karsa gate and Illeret.

Major highlights of the study

- 171 species of birds were recorded. Of these, 11 species had not been recorded in the Sibiloi - Illeret area before. These are: Booted Eagle, African Hawk Eagle, Steppe

Eagle, Common Buzzard, Grasshopper Buzzard, Black-faced Sandgrouse, Pygmy Kingfisher, Black-necked Weaver and Von der Decken's Hornbill.

- 3 rare species of birds was confirmed as being in existence at the site. Existence of these species had been previously recorded less than ten times. These were: The Arabian Bustard, Little Tern and Northern Masked Weaver.

- A total of 3,582 waterbirds, were counted belonging to 60 species, at ten selected sections along the shoreline.

- There was a confirmation of 44 long distance migrants species that were from Europe and parts of Asia (palaearctic migrants). These included common migrants such as Marsh Sandpiper, Common Greenshank and Common Sandpiper as well as rare ones such as the Caspian Plover and Little Tern. The presence of this large number of palaearctic migrants highlights the importance of the lake as a stop-over site for birds during fall and spring migration.

- Assessment of the area for its eco-tourism potential was done with an aim of identifying species that can draw birding tourists to the area and therefore enable local communities earn from tourism related projects. There are 3 species that are restricted to the area near Lake Turkana. These are: Arabian Bustard, Senegal Thick-knee and Little Tern.

- In addition 9 other species recorded that are restricted to the northern parts of Kenya are: Dwarf Raven, Litchenstein's Sandgrouse, Heuglin's Bustard, Fox Kestrel, Crested Lark, Somali Sparrow, Donaldson-Smith Sparrow-Weaver and White-billed Buffalo-Weaver (see species list attached). These 12 species can be used as a justification for opening up the northern circuit for birding tourism. However, for birding tourism to succeed, safaris need to include other things in their package such as the rich fossil sites and tribal cultural diversity.

Below are some of the bird species of interest from this region.

The Arabian Bustard

The Arabian Bustard, Ardeotis arabs, is described as rare in Kenya. Sibiloi National Park is perhaps the surest place to see this bird. During our survey, we recorded this species on three occasions – twice between the Koobi Fora Field Museum and Karsa Gate and once between Koobi Fora Field Museum and Illeret. Our sightings are the sixth record for this bird in Kenya.

Northern Masked Weaver

Another rare bird that we observed is the Northern Masked Weaver, Ploceus taeniopterus. Apart from Lake Turkana, this species is known only from Lake Baringo, swamps north of Lake Bogoria. We recorded a colony of twenty or so birds in lakeside reeds near the Kenya – Ethiopia border.

Vultures

On our way to Koobi Fora we were pleasantly surprised to bump into a flock of vultures feeding on a goat carcass. There was Ruppell's Griffon Vulture, African White-backed Vulture, White-headed Vulture and Lappet-faced Vulture competing for food with Dwarf Ravens and Steppe Eagles. The vulture observations and counts are important because this group of birds is on sharp decline due to indirect poisoning.

White-headed Vulture, Trigonoceps occipitalis, near a carcass south of Sibiloi National Park

Long distance migrants

Marsh Sandpiper, Tringa stagnatilis, Common Greenshank, Tringa nebularia and Common Sandpiper, Actitis hypoleucos feeding on an algae rich pool on the shorelines of Lake Turkana

Potential for birding tourism

The vast northern Kenya has great potential for birding tourism. Among the main attractions for bird watchers would be the Arabian Bustard. Sibiloi National Park is now one of the surest places to see this species in the whole of Kenya. Other species of interest include Fox Kestrel and Swallow-tailed Kite that are likely to be seen all the way from the red cliffs near Loyiangalani to the open acacia grasslands of Illeret.

For birding tourism to succeed, safaris need to include other things in their package. We recommend that relevant institutions focus on the rich fossil sites and cultural diversity of the people of northern Kenya.

Waterbirds are completely dependent on the lake for their existence. Infrastructure and other human activities around the lake and on the Omo River are likely to impact negatively on the birds. In fact, the eastern shoreline and Sibiloi National Park acts as a refuge for both terrestrial and waterbirds avoiding the western shoreline where oil exploration and drilling have increased pressure on the habitat.

Acknowledgments

We say many thanks to Prof Jack Harris whose grant made this expedition possible. Prof Jack also led the team and without him it would have not been possible to mount this expedition. We are also grateful to Dr. Purity Kiura, Director of Antiquities Sites and Monuments and Dr. Emmanuel Ndiema of the Archaeology Section of the Museums. Big thank you to the rest of the team including, John Muasya, Sylvester and Philippines

for driving us around and preparing yummy meals for us. We also thank the Kenya Wildlife Service Warden of Allia Bay and his staff for the support.

Data collected on birds sightings from October to November 2016 at the Sibiloi National Park														
EA No.	**Common Name**	**Scientific Name**												
0.1	**Struthionidae: Ostrich**		**wed 19**	**thur 20**	**fri 21**	**sat 22**	**sun 23**	**mon 24**	**tue 25**	**wed 26**	**thur 27**	**fri 28**	**sat 29**	**sun 30**
177.5	**Phasianidae: quails, francolins, spurfowl and allies**													
190	Crested Francolin	*Francolinus sephaena*					x			x	x		x	x
199	Yellow-necked Spurfowl	*Francolinus leucoscepus*		x		*x*	*x*			x	x	x	x	x
178	Common Quail	*Coturnix coturnix*									x			
69.5	**Anatidae: ducks and geese**													
71	White-faced Whistling Duck	*Dendrocygna viduata*				*x*		x	x	x		x	x	
74	Egyptian Goose	*Alopochen aegyptiaca*		x	*x*	*x*	*x*	*x*	*x*			*x*	*x*	*x*
89	Northern Shoveler	*Anas clypeata*				*x*			x			x		
87	Red-billed Teal	*Anas erythrorhyncha*							x					

84	Garganey	*Anas querquedula*				*x*			x			x		
88	Hottentot Teal	*Anas hottentota*						x	x	x				
67.5	**Phoenicopteridae: flamingos**													
68	Greater Flamingo	*Phoenicopterus roseus*				*x*								
69	Lesser Flamingo	*Phoeniconaias minor*			*x*							x		
52.5	**Ciconiidae: storks**													
60	Yellow-billed Stork	*Mycteria ibis*	x			*x*		x	x			x	x	x
59	African Open-billed Stork	*Anastomus lamelligerus*	x	x										
58	Marabou Stork	*Leptoptilos crumeniferus*				*x*		x						
60.5	**Threskiornithidae: ibises and spoonbills**													
61	Sacred Ibis	*Threskiornis aethiopicus*				*x*		*x*	x	*x*		*x*	x	
65	Glossy Ibis	*Plegadis falcinellus*				*x*		x	x			x	x	x

67	African Spoonbill	*Platalea alba*		x		*x*		x	x		x	x	x	
31.5	**Ardeidae: herons, egrets and bitterns**													
45	Striated Heron	*Butorides striata*						x						
42	Squacco Heron	*Ardeola ralloides*						*x*	x				x	
37	Cattle Egret	*Bubulcus ibis*						x	x	x			x	x
48	Grey Heron	*Ardea cinerea*		x		*x*	x	x	x	x	x	x	x	x
51	Black-headed Heron	*Ardea melanocephala*		x				x						
50	Goliath Heron	*Ardea goliath*		x		*x*			x		x	x	x	x
49	Purple Heron	*Ardea purpurea*						*x*				x		
47	Great White Egret	*Ardea alba*	x			*x*		*x*	x			x	x	
38	Little Egret	*Egretta garzetta*		x	*x*	*x*		*x*	*x*	*x*	*x*	*x*	*x*	*x*
19.5	**Pelecanidae: pelicans**													
20	Great White Pelican	*Pelecanus onocrotalus*				*x*			x					
21	Pink-backed Pelican	*Pelecanus rufescens*		x		*x*		x	x			x		x

25.5	**Phalacrocoracidae: cormorants**													
27	Reed Cormorant	*Phalacrocoraxafricanus*	x			*x*		x	x			x		
26	Great Cormorant	*Phalacrocoraxcarbo*	x											
158.5	**Falconidae: falcons**													
176	Lesser Kestrel	*Falco naumanni*				*x*						x		
167	Red-necked Falcon	*Falco chiquera*		x						x				
165	Eurasian Hobby	*Falco subbuteo*		x						x				x
95.5	**Accipitridae: diurnal birds of prey other than falcons**													
96	Osprey	*Pandion haliaetus*		x	*x*	*x*		x	x			x	x	
100	African Black-shouldered Kite	*Elanus caeruleus*	x											
102	Black Kite	*Milvus migrans*		x		*x*		x	x			x	x	x
143	African Fish Eagle	*Haliaeetus vocifer*				*x*		x	x	x	x			
106	White-backed Vulture	*Gyps africanus*	x											

107	Rüppell's Vulture	*Gyps rueppellii*	x								x		
109	White-headed Vulture	*Trigonoceps occipitalis*	x										
108	Lappet-faced Vulture	*Torgos tracheliotus*	x										
111	Black-chested Snake Eagle	*Circaetus pectoralis*									x		
118	Pallid Harrier	*Circus macrourus*	x	x				x		x	x	x	x
119	Montagu's Harrier	*Circus pygargus*			*x*				x		x		
124	Eastern Chanting Goshawk	*Melieraxpoliopterus*				*x*		x	x	x	x	x	x
122	Gabar Goshawk	*Micronisus gabar*					x						
136	Grasshopper Buzzard	*Butastur rufipennis*									x		
138	Common Buzzard	*Buteo buteo*				*x*	x				x		
147	Tawny Eagle	*Aquila rapax*	x										
148	Steppe Eagle	*Aquila nepalensis*	x										
152	African Hawk Eagle	*Aquila spilogaster*	x				x						
153	Booted Eagle	*Aquila pennata*							x				

232.5	**Otididae: bustards**													
236	Arabian Bustard	*Ardeotis arabs*		x		*x*			x					
235	Kori Bustard	*Ardeotis kori*						x	x					
234	Heuglin's Bustard	*Neotis heuglinii*	x	x		*x*						x	x	
237	Buff-crested Bustard	*Lophotis gindiana*				*x*		x	x	x	x	x	x	x
207.5	**Rallidae: rails and relatives**													
225	Common Moorhen	*Gallinula chloropus*						x						
204.5	**Turnicidae: buttonquails and Quail-plover**													
249	Senegal Thick-knee	*Burhinus senegalensis*		x	*x*	*x*		x	x					x
251	Spotted Thick-knee	*Burhinus capensis*				*x*						x	x	x
245.5	**Recurvirostridae: stilts and avocets**													
247	Black-winged Stilt	*Himantopus himantopus*	x	x		x		x	x	x	x	x	x	x

246	Pied Avocet	*Recurvirostra avosetta*				*x*		x	x			x		x
262.5	**Charadriidae: plovers**													
279	Spur-winged Plover	*Vanellus spinosus*		x	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
284	Crowned Plover	*Vanellus coronatus*		x					x					
275	Grey Plover	*Pluvialis squatarola*		x										
263	Common Ringed Plover	*Charadrius hiaticula*	x	x	*x*	*x*		x	x	x		x	x	x
265	Kittlitz's Plover	*Charadrius pecuarius*		x	*x*	*x*		x	x			x	x	x
273	Caspian Plover	*Charadrius asiaticus*							x					
240.5	**Jacanidae: jacanas**													
241	African Jacana	*Actophilornis africanus*							x					
286.5	**Scolopacidae: sandpipers and relatives**													

300	Common Snipe	*Gallinago gallinago*							x					
304	Black-tailed Godwit	*Limosa limosa*				*x*			x			x		
307	Eurasian Curlew	*Numenius arquata*				*x*								
310	Marsh Sandpiper	*Tringa stagnatilis*		x		*x*		x	x			x		x
311	Common Greenshank	*Tringa nebularia*	x	x		*x*		x	x	x		x	x	x
312	Green Sandpiper	*Tringa ochropus*	x	x	*x*									
313	Wood Sandpiper	*Tringa glareola*		x				x	x		x	x		x
314	Common Sandpiper	*Actitis hypoleucos*		x	*x*	*x*		x	x	x	x	x	x	x
294	Sanderling	*Calidris alba*			*x*	*x*								x
287	Little Stint	*Calidris minuta*	x	x		*x*		x	x	x		x	x	x
293	Curlew Sandpiper	*Calidris ferruginea*		x	*x*	*x*		x	x	x				
298	Ruff	*Philomachus pugnax*				*x*		x	x	x		x	x	
251.5	**Glareolidae: Egyptian Plover, coursers and pratincoles**													
257	Somali Courser	*Cursorius somalensis*											x	

259	Collared Pratincole	*Glareola pratincola*		x	*x*	*x*			x			x		x
321.5	**Laridae: gulls, terns and skimmers**													
330	Gull-billed Tern	*Gelochelidon nilotica*		x		*x*		x	x	x		x		x
331	Caspian Tern	*Hydroprogne caspia*										x		x
340	Little Tern	*Sternula albifrons*		x		*x*		x	x	x		x		x
343	Whiskered Tern	*Chlidonias hybrida*										x		
344	White-winged Black Tern	*Chlidonias leucopterus*	x			*x*		x	x	x	x	x	x	x
348.5	**Pteroclidae: sandgrouse**													
349	Chestnut-bellied Sandgrouse	*Pterocles exstus*	x	x	*x*	*x*	x	x	x	x	x	x	x	x
350	Black-faced Sandgrouse	*Pterocles decoratus*				*x*		x	x		x	x		x
351	Lichtenstein's Sandgrouse	*Pterocles lichtensteinii*				*x*					x	x		x

353.5	**Columbidae: pigeons and doves**													
366	Speckled Pigeon	*Columba guinea*	x	x				x	x				x	x
371	African Mourning Dove	*Streptopelia decipiens*		x		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
373	Ring-necked Dove	*Streptopelia capicola*		x		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
361	Namaqua Dove	*Oena capensis*				*x*		x	x	*x*	*x*	*x*	*x*	*x*
389.5	**Musophagidae: turacos**													
401	White-bellied Go-away-bird	*Corythaixides leucogaster*					x	x		x		x	x	
403.5	**Cuculidae: cuckoos and coucals**													
410	Common Cuckoo	*Cuculus canorus*					x				x			
479.5	**Coliidae: mousebirds**													
482	Blue-naped Mousebird	*Urocolius macrourus*		x		*x*	x		x			x	x	x
516.5	**Coraciidae: rollers**													

521	Rufous-crowned Roller	*Coracias naevius*				*x*								
519	Lilac-breasted Roller	*Coracias caudatus*		x									x	x
517	Eurasian Roller	*Coracias garrulus*						x	x		x			
485.5	**Alcedinidae: kingfishers**													
486	Grey-headed Kingfisher	*Halcyon leucocephala*							x					
497	African Pygmy Kingfisher	*Ceyxpictus*							x					
500	Pied Kingfisher	*Ceryle rudis*				*x*		*x*	*x*	*x*	*x*			
500.5	**Meropidae: bee-eaters**													
516	Somali Bee-eater	*Merops revoilii*	x	x		*x*			x	x	x		x	x
501	Eurasian Bee-eater	*Merops apiaster*	x			*x*	x	x	x	x	x			x
504	Northern Carmine Bee-eater	*Merops nubicus*	x											
523.5	**Upupidae: Hoopoe**													

524	Hoopoe	*Upupa epops*		x		*x*						x	x	
524.5	**Phoeniculidae: wood-hoopoes**													
532	Abyssinian Scimitarbill	*Rhinopomastus minor*					x						x	
532.5	**Bucerotidae: hornbills**													
538	Red-billed Hornbill	*Tockus erythrorhynchus*		x										
539	Eastern Yellow-billed Hornbill	*Tockus flavirostris*					x		x			x	x	
540	Von der Decken's Hornbill	*Tockus deckeni*					x		x					
552.5	**Capitonidae: barbets and tinkerbirds**													
571	Black-throated Barbet	*Tricholaema melanocephala*					x			x	x	x	x	
582	Red-and-yellow Barbet	*Trachyphonus erythrocephalus*							x			x	x	x
583	D'Arnaud's Barbet	*Trachyphonus darnaudii*		x							x			

597.5	**Picidae: wrynecks and woodpeckers**													
601	Nubian Woodpecker	*Campethera nubica*											x	x
1009	**Platysteiridae: batises, wattle-eyes and relatives**													
1016	Pygmy Batis	*Batis perkeo*								x			x	
1021	**Malaconotidae: helmetshrikes, bushshrikes, tchagras and puffbacks**													
1061	Rosy-patched Bushshrike	*Rhodophoneus cruentus*							x					
1046	Brubru	*Nilaus afer*					x						x	
1030	**Laniidae: shrikes**													
1029	Northern White-crowned Shrike	*Eurocephalus rueppelli*					x			x	x			
1033	Isabelline Shrike	*Lanius isabellinus*			*x*			x	x	x	x		x	x
1042	Somali Fiscal	*Lanius somalicus*	x			*x*		x	x	x	x	x	x	x

1085	**Oriolidae: orioles**													
1085	Eurasian Golden Oriole	*Oriolus oriolus*					x				x		x	x
1082	**Dicruridae: drongos**													
1082	Common Drongo	*Dicrurus adsimilis*		x			x	x	x	x			x	
1091.5	**Corvidae: crows and allies**													
1095	Pied Crow	*Corvus albus*	x											
1094	Dwarf Raven	*Corvus edithae*		x		*x*	x	x	x	x	x	x	x	x
1097	Fan-tailed Raven	*Corvus rhipidurus*	x											
649.5	**Hirundinidae: saw-wings, swallows and martins**													
652	Sand Martin	*Riparia riparia*		x				x	x			x		x
650	Banded Martin	*Riparia cincta*						x						
660	Barn Swallow	*Hirundo rustica*		x			*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*

623.5	**Alaudidae: larks**													
644	Crested Lark	*Galerida cristata*	x	x	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
649	Chestnut-headed Sparrow Lark	*Eremopterixsignatus*	x	x	*x*	*x*	x	x	x	x	x	x	x	x
892.5	**Cisticolidae: cisticolas and allies**													
920	Desert Cisticola	*Cisticola aridulus*											x	
925	Pale Prinia	*Prinia somalica*						x						x
955	Red-fronted Warbler	*Urorhipis rufifrons*									x		x	x
697.5	**Pycnonotidae: bulbuls**													
729	Common Bulbul	*Pycnonotus barbatus*		x		*x*	x	x	x	x	x	x	x	x
851.5	**Sylviidae: Old World warblers**													
873	Willow Warbler	*Phylloscopus trochilus*								x	x	x	x	x
971	Yellow-vented Eremomela	*Eremomela flavicrissalis*					x				x		x	

962	Northern Crombec	*Sylvietta brachyura*											x	
870	Blackcap	*Sylvia atricapilla*									x		x	x
868	Common Whitethroat	*Sylvia communis*					x			x	x	x	x	x
1099	**Sturnidae: starlings and oxpeckers**													
1128	Wattled Starling	*Creatophora cinerea*					x	x	x				x	x
1115	Rüppell's Starling	*Lamprotornis purpuroptera*		x										
1118	Superb Starling	*Lamprotornis superbus*		x		*x*	*x*	*x*	*x*	*x*	*x*			
1126	Magpie Starling	*Speculipastor bicolor*				*x*		x	x	x	x	x	x	
1129	Red-billed Oxecker	*Buphagus erythrorhynchus*								x				
7555	**Muscicapidae: chats, wheatears and Old World flycatchers**													
785	Thrush Nightingale	*Luscinia luscinia*				*?? See fotos*								
782	Spotted Palm Thrush	*Cichladusa*								x			x	

		guttata												
786	White-browed Scrub Robin	*Cercotrichas leucophrys*									x			x
791	Rufous Bush Chat	*Cercotrichas galactotes*												x
796	Northern Wheatear	*Oenanthe oenanthe*	x	x	*x*	*x*	x	x	x	x	x	x	x	x
797	Pied Wheatear	*Oenanthe pleschanka*										x		x
813	Common Rock Thrush	*Monticola saxtilis*	x								x			
845	Pale Flycatcher	*Bradornis pallidus*		x										
829	Spotted Flycatcher	*Muscicapa striata*	x	x	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
1131	**Nectariniidae: sunbirds**													
1135	Eastern Violet-backed Sunbird	*Anthreptes orientalis*					x			x	x	x	x	x
1151	Hunter's Sunbird	*Chalcomitra hunteri*					x							
1173	Beautiful Sunbird	*Cinnyris pulchellus*								x				

1152	Variable Sunbird	*Cinnyris venustus*		x			x			x	x	x	x	x
1184	**Passeridae: sparrow weavers, Old World sparrows and petronias**													
1196	Donaldson Smith's Sparrow Weaver	*Plocepasser donaldsoni*										x		
1184	House Sparrow	*Passer domesticus*		x	*x*	*x*	x		x		x	x	x	x
1187	Grey-headed Sparrow	*Passer griseus*					x		x	x	x	x	x	x
1190	Yellow-spotted Petronia	*Petronia pyrgita*					x							
1193	**Ploceidae: weavers, bishops and widowbirds**													
1193	White-headed Buffalo Weaver	*Dinemellia dinemelli*	x	x		*x*	x	x	x	x	x	x	x	x
1209	Black-necked Weaver	*Ploceus nigricollis*								x				
1229	Northern Masked Weaver	*Ploceus taeniopterus*								x				
1268	**Estrildidae: waxills**													

1275	Green-winged Pytilia	*Pytilia melba*								x			x	
672.5	**Motacillidae: wagtails, longclaws and pipits**													
678	Yellow Wagtail	*Motacilla flava*	x			*x*		x	x	x	x	x		
689	Tree Pipit	*Anthus trivialis*		x							x	x		
1332	**Fringillidae: canaries, citrils, seedeaters and relatives**													
1339	Northern Grosbeak Canary	*Crithagra donaldsoni*				*x*								
1350	**Emberizidae: Old World buntings**													
1352	Cinnamon-breasted Bunting	*Emberiza tahapisi*							x		x	x		
1355	Somali Bunting	*Emberiza poliopleura*									x		x	x

KENYA WILDLIFE SERVICE

NATIONAL MUSEUMS OF KENYA
WHERE HERITAGE LIVES ON

LAKE TURKANA NATIONAL PARKS (Sibiloi, Central Island and South Island) Management Plan 2018-2028

Acknowledgements

KENYA WILDLIFE SERVICE	This General Management Plan has been developed through a participatory planning process involving a cross section of stakeholders, under the coordination of a Core Planning Team comprising representatives from Sibiloi, Central Island and South Island National Parks PA managers, KWS HQ planners, National Museums of Kenya Turkana Basin Institute and County Government of Marsabit representatives.
NATIONAL MUSEUMS OF KENYA WHERE HERITAGE LIVES ON	
TURKANA BASIN INSTITUTE	
COUNTY GOVERNMENT OF MARSABIT THE CRADLE OF MANKIND	
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Approval Page

The management of the Kenya Wildlife Service and the National Museums of Kenya have approved the implementation of this management plan for the Lake Turkana National Parks.

Director General, KWS

Date: 11/2/19

Director General, NMK

Date: 5/12/18

Executive Summary

The Plan

This 10-year management plan for the Lake Turkana National Parks[1] (LTNPs), a UNESCO World Heritage Site, is not a totally new plan but builds on previous plans developed for protected areas within the LTNPs; most notably, the previous management plans for Sibiloi-Central Island National Parks, which spanned the period from 2002-2007, prepared by the then KWS Planning and Research Department; and a concept plan that was developed by the Sibiloi NP management in collaboration with other stakeholders that sought to improve the quality of actions outlined in the 2002-2007 management plans thereby aiding implementation.

Supported by the application of the Protected Areas Planning Framework (PAPF), and building on the experience of the previous planning initiatives, this plan will be easier to implement, respond to the key issues impacting on the area, and provide the guidance and support that LTNPs managers require to manage the protected areas effectively.

Plan Purpose

In response to threats impacting the LTNPs, the purpose of this management plan is:

To provide LTNPs managers and stakeholders a practical framework for conserving and protecting natural and cultural resource values at the LTNPs to maintain its international recognition as a world heritage site.

This purpose was developed in response to the LTNPs Vision Statement which describes the future desired state of the LTNPs.

The LTNPs Vision Statement

In ten years.....

LTNPs is a conservation showcase demonstrating how both natural and cultural heritage can be sustainably conserved for the benefit of present and future generations. There is strong participation of the local community in the management of the LTNPs and threats to both natural and cultural values are abated through increased collaboration with stakeholders making the LTNPs worthy of its designation as a World Heritage Site.

[1] Sibiloi, Central Island, and South Island National Parks

LTNPs Purpose Statement

The primary purpose of the LTNPs is:

To conserve threatened and endemic species of the LTNPs and their associated habitats, and protect the rich prehistoric and cultural heritage values linked to the evolution of species, including humankind, for present and future generations

LTNPs Exceptional Resource Values

The development of the above Purpose Statement was based on the stakeholder identification of the LTNPs' Exceptional Resource Values (ERVs), which were divided into four categories: biodiversity, scenic, social and cultural. The most important ERVs for the LTNPs were identified as: endemic fish, reptiles and amphibians; inscription as a World Heritage Site by UNESCO; listing as an Important Bird Area (IBA) by Birdlife International; Bird breeding areas; threatened large herbivores (northern Topi, Oryx and gerenuk), Large carnivores; scenic sites, crater lakes and pre-historic sites.

Major Management Issues of Concern

The major management issues of concern at LTNPs that are addressed in this plan are:

1. Damming of inflowing rivers and upstream use of waters
   Changing seasonality and nutrient status of inflowing waters
2. Over-grazing by livestock
3. Drought and climate change
4. Poaching
5. Unclear management responsibilities on protection and preservation of cultural heritage in Sibiloi National Park
6. Lack of a unified management structure for the LTNPs
7. Underutilization of LTNPs
8. Lack of stakeholder engagement forums

PA Zoning Scheme

The PAPF prescribes dividing large conservation areas into Management Zones for ease of management. In addition, to facilitate allowable land uses in a PA such as visitor use, visitor use zones, (High Use, Low Use, and Wilderness zones), are also defined. Other zones are also defined to offer protection to critical habitats such as wildlife breeding areas or environmentally sensitive areas, and to provide an area where the PA can interact with adjacent communities and influence them to support conservation efforts of the PA.

LTNPs management sectors

This Plan proposes that the three National Parks comprising the Lake Turkana National Parks World Heritage Site are placed under a unified management structure. To achieve this, and in line with the KWS Management Sector Strategy, each of the three parks is considered

as a Management Sector (Management Zone) overseen by a Junior Warden who reports to a Senior Warden who is the overall officer in-charge of the three parks that together constitute the LTNPs World Heritage Site. The three Sectors are Sibiloi National Park; Central Island National Park and South Island National Park.

LTNPs Land Use Zoning

The land use zones in the LTNPs include zones that aim to protect sensitive habitats, wildlife breeding areas and fragile cultural resources; those that aim to optimise visitation patterns across the area; and those that seek to promote positive PA-community interactions. All the three parks have an aquatic component comprising Lake Turkana waters. A two-kilometre-wide belt from the lake shore in Sibiloi National Park and a similar belt surrounding the Central Island National Parks has been designated as a **Restricted Use Zone.** In addition all the aquatic component of the South Island National Park is included in this zone. The zone also includes a terrestrial component of a 30 metre strip from the lake shore (nesting shores) and riparian corridors and some rocky outcrops. The purpose of this zone is to offer protection to fish breeding areas; feeding habitats for Nile crocodiles; breeding sites for birds, and resting areas for hippopotamuses (in Sibiloi NP). On the other hand, two visitor use zones, **Low Use** and **Wilderness Zones** have been provided to support different levels and types of visitor use. Finally influence zones for PA-Community interactions have been provided in community land whose inhabitants interact with the PAs.

Ecological Management Programme

The Ecological Management Programme aims to ensure that "*The conservation of the LTNPs natural environment is enhanced, through improved ecological monitoring, applied research and targeted management interventions*". In order to achieve this aim, management will focus on conservation of the following conservation targets

- Lake system
- Littoral zone(wetlands)
- Lacustrine grassland
- Acacia-Commiphora bushland-grasslands
- Riparian Habitats
- Crater lakes
- Rocky outcrops and cliffs
- Large Carnivores
- Large Herbivores
- Rare and threatened herptiles
- Threatened terrestrial birds
- Water birds
- Archaeological sites

Underpinning the Ecological Management Programme is the need to maintain ecological integrity of the LTNPs by ensuring that; habitat connectivity with surrounding areas is maintained; protection of species of conservation concern is enhanced; a balance between conservation and development is maintained; and ecological trends and threats are monitored and understood. The objectives of the Ecological Management Programme address cross-cutting threats to the LTNPs most important habitats (covering conservation targets: Lake system, Littoral zone, Lacustrine grassland, Acacia - Commiphora bushland-grasslands, and Riparian Habitats); address threats to the LTNPs species of concern (covering conservation targets: Large carnivores, large herbivores); and address the need to understand and monitor conservation targets and their threats.

Prehistoric and Cultural Heritage Management Programme

The purpose of the Prehistoric and Cultural Heritage Management Programme is *"to promote participatory conservation and sustainable use of prehistoric and cultural heritage resources in, and around Lake Turkana through documentation, research and dissemination"*. The programme seeks to collect, document and promote cultural heritage; protect and understand natural and cultural heritage; and promote research collaboration and dissemination of information on cultural and natural resources.

Tourism Development and Management Programme

The purpose of the Tourism Development and Management Programme is "to develop low impact, high quality tourism that capitalises on the LTNPS distinctive values and imparts memorable experiences to visitors. This programme seeks to develop the LTNPs tourism product to appeal to different market segments by providing a variety of distinctive visitor experiences that capitalise on the area's diverse tourist attractions; provide a high quality and low environmental impact visitor experience; promote environmentally sensitive tourism investment to generate sufficient revenue to support resource conservation efforts; and promote and market LTNPs as a unique destination based on its archaeological, geomorphological as well as biodiversity resources.

Community Partnership & Conservation Education Programme

The purpose of the Community Partnership and Conservation Education Programme is *"to enhance community support for conservation at the LTNPs and promote conservation sensitive land uses to improve community livelihoods".* In implementing this programme the LTNPs management will strive to ensure that open and constructive relations between KWS and local communities are developed; community support for the conservation of the LTNPs is promoted by ensuring that the LTNPs have a positive impact on the lives of adjacent communities; long-term threats to the LTNPs are reduced by promoting conservation-based and conservation-friendly land uses in the greater LTNPs ecosystem.

Protected Area Operations and Security Programme

The purpose of the Protected Area Operations and Security Programme is "*to support effective implementation of the other management programs and protect wildlife and archaeological resources"*. This programme seeks to ensure that effective management systems and human resource capacity are deployed in the LTNPs; infrastructure to support tourism, ranger operations and administration is improved; vehicles, plants, machinery and equipment are provided and maintained; and wildlife, habitat and visitor security is enhanced.

Plan monitoring

The plan monitoring framework has been designed to provide guidance for the assessment of the potential impacts resulting from the implementation of each of the five management programmes. The framework sets out the desired positive impact of each programme's objectives as well as any potential negative impacts that may possibly occur. The framework also includes easily measurable and quantifiable indicators for assessing these impacts, and potential sources of the information needed. Monitoring the impacts of plan implementation is a key aspect of the ultimate success of the plan and for informing adaptive management of the area, and as such ensuring that overall benefits from plan implementation are maximised, and that any negative impacts are appropriately mitigated.

Contents

Figures

Tables

Acronyms

CAP	TNC's Conservation Action Planning methodology
CPT	Core Planning Team
CWS	Community Wildlife Service (KWS)
ERV	Exceptional Resource Value
GPS	Global Positioning System
HWC	Human-Wildlife Conflict
KEA	Key Ecological Attribute (of conservation target)
KWS	Kenya Wildlife Service
IUCN	International Union for Conservation of Nature
NEMA	National Environment Management Authority
PA	Protected Area
PAC	Problem Animal Control
PAPF	KWS Protected Areas Planning Framework
SC	Special Campsite
LTNPs	Lake Turkana National Parks

Plan Foundation

The Plan

This 10-year management plan for the Lake Turkana National Parks[2] (LTNPs) is not a totally new plan but builds on previous plans developed for protected areas within the LTNPs; most notably, the previous management plans for Sibiloi-Central Island National Parks, which spanned the period from 2002-2007, prepared by the then KWS Planning and Research Department; and a concept plan that was developed by the Sibiloi NP management in collaboration with other stakeholders that sought to improve the quality of actions outlined in the 2002-2007 management plans thereby aiding implementation.

Supported by the application of the Protected Areas Planning Framework (PAPF), and building on the experience of the previous planning initiatives, this plan will be easier to implement, respond to the key issues impacting on the area, and provide the guidance and support that LTNPs managers require to manage the protected areas effectively.

Plan purpose and functions

LTNPs is currently facing many challenges; poaching has decimated populations of key wildlife species while illegal livestock grazing in Sibiloi National Park (SNP) has been responsible for increased degradation of the fragile park habitats and archaeological resources. Fishing in the three LTNPs' aquatic components that are fish breeding areas for fish threatens fish stocks. Further, reducing lake levels attributed to damming of rivers that drain in Lake Turkana coupled with climate change impacts threaten the ecological integrity of the lake and river systems.

In response to these and other key issues impacting the LTNPs, **the purpose of this management plan** has been defined as:

To provide LTNPs managers and stakeholders a practical framework for conserving and protecting natural and cultural resource values at the LTNPs to maintain its international recognition as a world heritage site.

In addition to the key issues outlined above, this purpose was developed in response to the more detailed LTNPs Vision Statement (see box below), which describes the future desired state of the LTNPs.

The LTNPs Vision Statement

In the next ten years, it is anticipated that.....

LTNPs is a conservation showcase demonstrating how both natural and cultural heritage can be sustainably conserved for the present and future generations. There is strong participation of the local community in the management of the LTNPs and threats to both natural and cultural values are abated through increased collaboration with stakeholders making the LTNPs worthy of its designation as a World Heritage Site.

[2] Sibiloi, Central Island, and South Island National Parks

- The LTNPs is supporting a wide array of savannah and aquatic species which attract visitors to the area and these species are managed based on sound scientific information.
- The *LTNPs-adjacent communities* are receiving tangible benefits from conservation; they are supporting the conservation efforts by maintaining community conservancies in their communal land. The community is also benefiting from improved livestock production systems, which have markedly reduced poverty levels among the local community.
- *Visitors* are guaranteed a memorable and transformational experience as they interact with the protected areas and their ecosystems in a peaceful, serene and secure environment. A variety of culture and nature-based tourism activities are enjoyed in this unique mixture of aquatic and savannah ecosystems.
- The LTNPs has effective and modernized *operational capacity*, which includes skilled and motivated human capital and reliable management infrastructure.

In order to achieve the management plan's purpose and to work towards the realisation of the LTNPs' Vision Statement, the LTNPs Management Plan has been designed to fulfil the following specific functions:

- **Vision**: Set out a common understanding between stakeholders of the purpose of the LTNPs and their most important values, towards which all management action will be focused;
- **What**: Establish clear management objectives that are agreed upon by the stakeholders and managers and that, if achieved, will ensure the LTNPs purpose will be fulfilled and exceptional resource values are conserved;
- **How**: Provide clear and unambiguous guidance and a rationale for the specific management actions that LTNPs managers will need to implement over the 10-year timeframe of the plan to achieve the management objectives;
- **Where**: Define a mechanism for LTNPs zoning to enable different types and intensities of use in different parts of the LTNPs, thereby facilitating reconciliation of the sometimes competing conservation and development objectives;
- **When**: Provide a detailed activity plan for the first three years of implementing the management plan, thereby establishing a crucial link between the plan's long-term management objectives and the annual operational planning and budgeting routinely carried out by LTNPs Managers;
- **Who**: Provide a practical framework enabling the collaboration of LTNPs managers and other institutions and stakeholders in implementing the plan; and
- **Rules**: Set out clear and unambiguous prescriptions and regulations on what can and cannot occur in different parts of the LTNPs to achieve the area's management objectives.

The Plan is NOT designed to:

- Provide a comprehensive reference source for the LTNPs, with detailed background information on the area's biodiversity, ecology, geology, soils, etc;
- Set out a detailed inventory of issues or problems impacting the LTNPs, that are not directly addressed through the plan's management objectives and actions; and
- Provide detailed descriptions of the management, administration, and national policies, unless they are relevant to the plan's management objectives and actions.

Plan structure

In accordance with the PAPF, the LTNPs plan structure has been developed to be as simple as possible, and as such, easily understood and implemented by stakeholders. The following points summarise the plan's main sections:

- **Plan Foundations**. This chapter introduces the plan, and describes its structure and stakeholder participation mechanisms. The chapter also introduces the LTNPs, its location, constituent protected areas, and exceptional resource values. It also sets out the LTNPs overall Purpose and Vision Statements and the major management issues of concern addressed by the plan.
- **Zonation Scheme.** This section sets out areas of the LTNPs where different types of uses e.g. visitor use and utility will be allowed, areas where human activity will be restricted to protect environmentally sensitive areas, and designated livestock routes to access water. The scheme contains specific prescriptions on the types of activities and developments allowed in each zone. The scheme also describes the management sectors that the LTNPs is divided into, in order to facilitate the efficient and effective management of the area.
- **The five management programmes.** The main bulk of the plan is divided into five management programmes:
    - **Ecological Management Programme**
    - **Prehistoric and Cultural Heritage Management Programme**
    - **Tourism Development and Management Programme**
    - **Community Partnership and Conservation Education Programme**
    - **Protected Area Operations and Security Programme**

  Each programme includes a programme purpose statement, which sets out the overall goal to which management is working towards, and a set of guiding principles describing the overall management approach pursued through the programme. Each programme also contains management objectives that set out the goals that LTNPs management aims to achieve over the 10-year lifespan of the plan, and a set of specific management actions to achieve these goals. In order to facilitate plan implementation, wherever possible, the management programmes, or in some cases specific objectives therein, have been designed to align with LTNPs management and administration structures.
- The **plan monitoring** framework provides guidance to enable the assessment of the potential impacts, positive, and where appropriate negative, resulting from the implementation of each of the five management programmes. The framework sets out the desired

impact of each programme's objectives, and any potential negative impacts that may occur. The framework also includes easily measurable and quantifiable indicators for assessing these impacts, and potential sources of the information required.

Participation in planning

The three principal mechanisms used to enable stakeholder participation in planning for LTNPs are: the Core Planning Team, Stakeholder Planning Workshops, and Expert Working Group Meetings. The roles and functions of these mechanisms are elaborated in the following paragraphs:

- The ***LTNPs Core Planning Team*** (CPT) provided overall guidance and oversight to the entire planning process and consisted of: LTNPs managers and researchers from KWS and NMK; KWS and NMK Headquarters staff; and TBI staff. CPT members ensured that the plan's development progressed smoothly by: ensuring funding was available for planning events; collecting and collating information necessary for planning; organising and facilitating planning events; and writing up planning event outputs into the final management plan. CPT members also participated in all other planning mechanisms described below.

- ***Three stakeholders' planning workshops,*** one for each of the three Lake Turkana National Parks, were organised to give stakeholders opportunity to contribute to development of the management plan.

- Five ***Expert Working Groups*** were formed for purposes of developing the plan's five management programmes. Each of these working groups comprised of CPT members, and other key stakeholders and experts. Each working group refined the relevant management programme's purpose, strategy and objectives, and developed the subsidiary management actions necessary for achieving each objective.

Annex 1 provides a detailed list of stakeholders who participated in the LTNPs' plan development, and the specific events that they contributed to.

The Lake Turkana National Parks

Area description

The LTNPs consists of three national parks: Sibiloi, Central Island and South Island. The three national parks are administered from three headquarter stations: Alia Bay (for Sibiloi); Kalakol (for Central Island); and Loiyangalani (for South Island). LTNPs was initially inscribed on the UNESCO World Heritage List in 1997 and named Sibiloi-Central Island World Heritage Site. The World Heritage Site was later expanded in 2001 to include South Island National Park and renamed ***Lake Turkana National Parks World Heritage Site***. The site was listed because its geology and fossil records represent major stages of earth history including records of life represented by hominid discoveries. It also features diverse habitats resulting from ecological changes over time ranging from terrestrial, aquatic, desert to grasslands inhabited by diverse fauna.

Figure 1 shows the location of the three Lake Turkana National Parks. A brief description of each of the three LTNPs is given in the following sections.

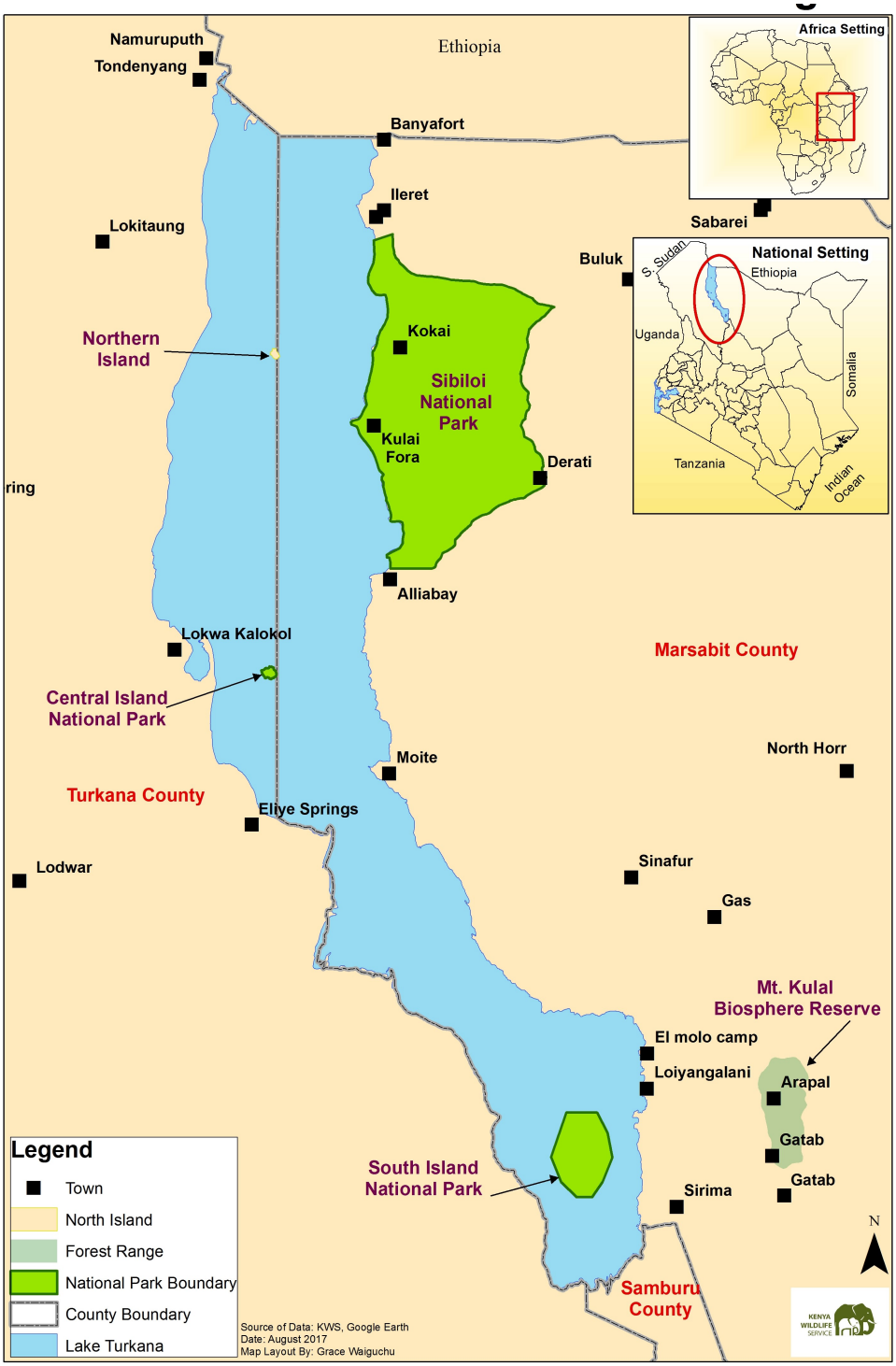

Figure 1: Lake Turkana National Parks

Sibiloi National Park

Sibiloi National Park was gazetted in 1973 and covers 1570 Km^2. In addition, to enhance the protection and preservation of the cultural heritage, the park was gazetted as a national monument through legal notice no. 1517 of 27th May, 1982. The park is located in Marsabit County.

The park holds numerous fossil deposits that have resulted in the discovery of some of the world's oldest hominid fossils from nearly four decades of research in the area. Five outstanding values within the national park are: the shell of a giant tortoise dating back 3 million years, a set of jaws from a crocodile believed to have been over 14 Meters in length and the extinct Behemoth, forebear of the elephant with massive tusks, both dating back 1.5 million years, the petrified forest and the hominid (early man) finds.

It hosts rich avifauna and game typical of arid environments, with antelopes such as Oryx, Topi, Gerenuk, Grant's Gazelle and a rich community of carnivores. The area is also a stronghold for bats of arid environments, hosting unique species, and to endemic reptiles. Figure 2 is a map of Sibiloi National Park.

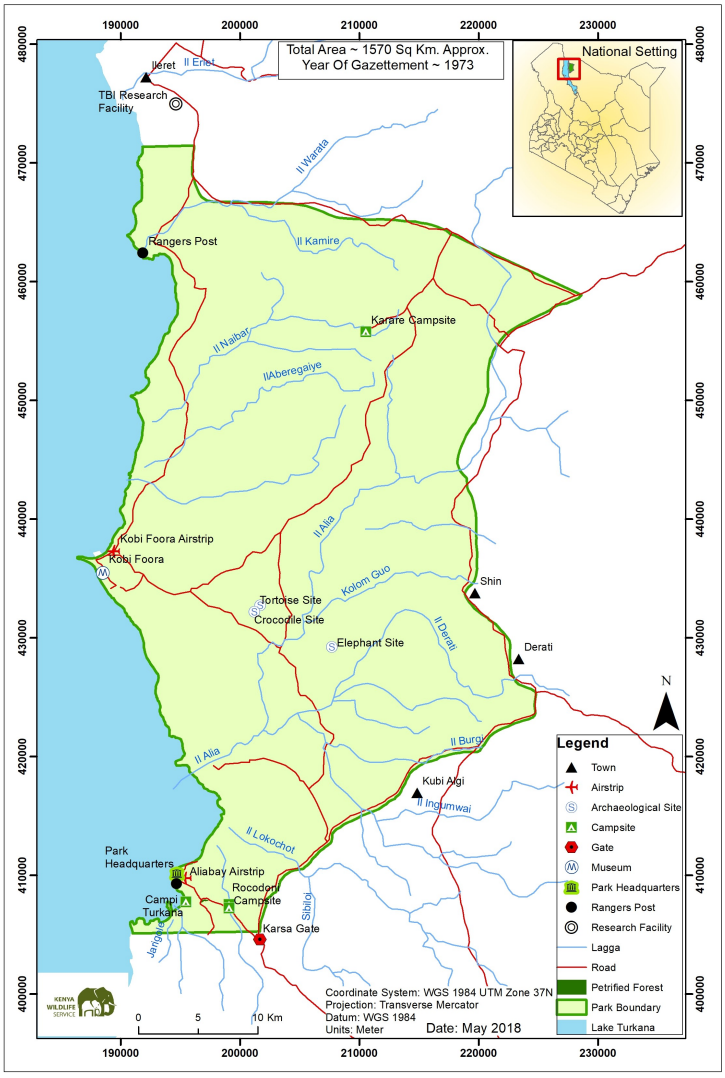

Figure 2: Sibiloi National Park

Central Island National Park

Central Island National Park covers 5 km^2 and is located within Turkana County. Situated roughly at the centre of Lake Turkana, the park was gazetted in 1985 and it has three crater lakes, namely: Tilapia Lake, Crocodile Lake and Flamingo Lake. The park is an important breeding area for the Nile crocodile *Crocodylus niloticus* and several snake species. It is also an important flyway passage and stopover for Palaearctic migrant birds.

Figure 3 is a map of Central Island National Park.

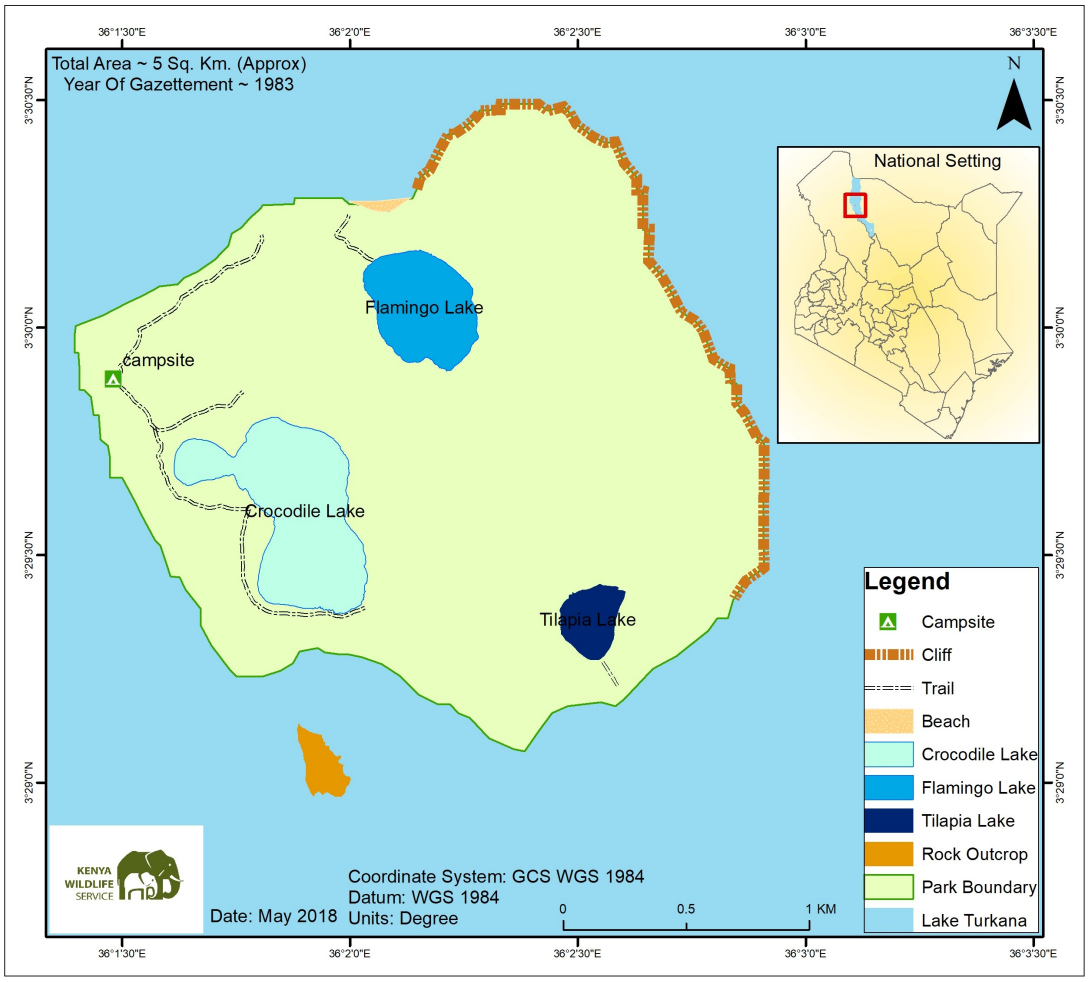

Figure 3: Central Island National Park

South Island National Park

Located in Marsabit County and covering 150 km^2, South Island National Park is situated at the Southern tip of Lake Turkana and it was gazetted on 26th January 1973. The park comprises of an island that covers around 36 Km^2, and an aquatic component of about 114 km^2 surrounding the Island. Similar to Sibiloi/Central Island national Parks, South Island National Park is a breeding ground for crocodile and a range of venomous snakes. It is also one of Kenya's Important Bird Areas (IBA) as defined by Birdlife International as it is a key stopover for Palaearctic migrant water birds.

Figure 4 is a map of South Island National Park.

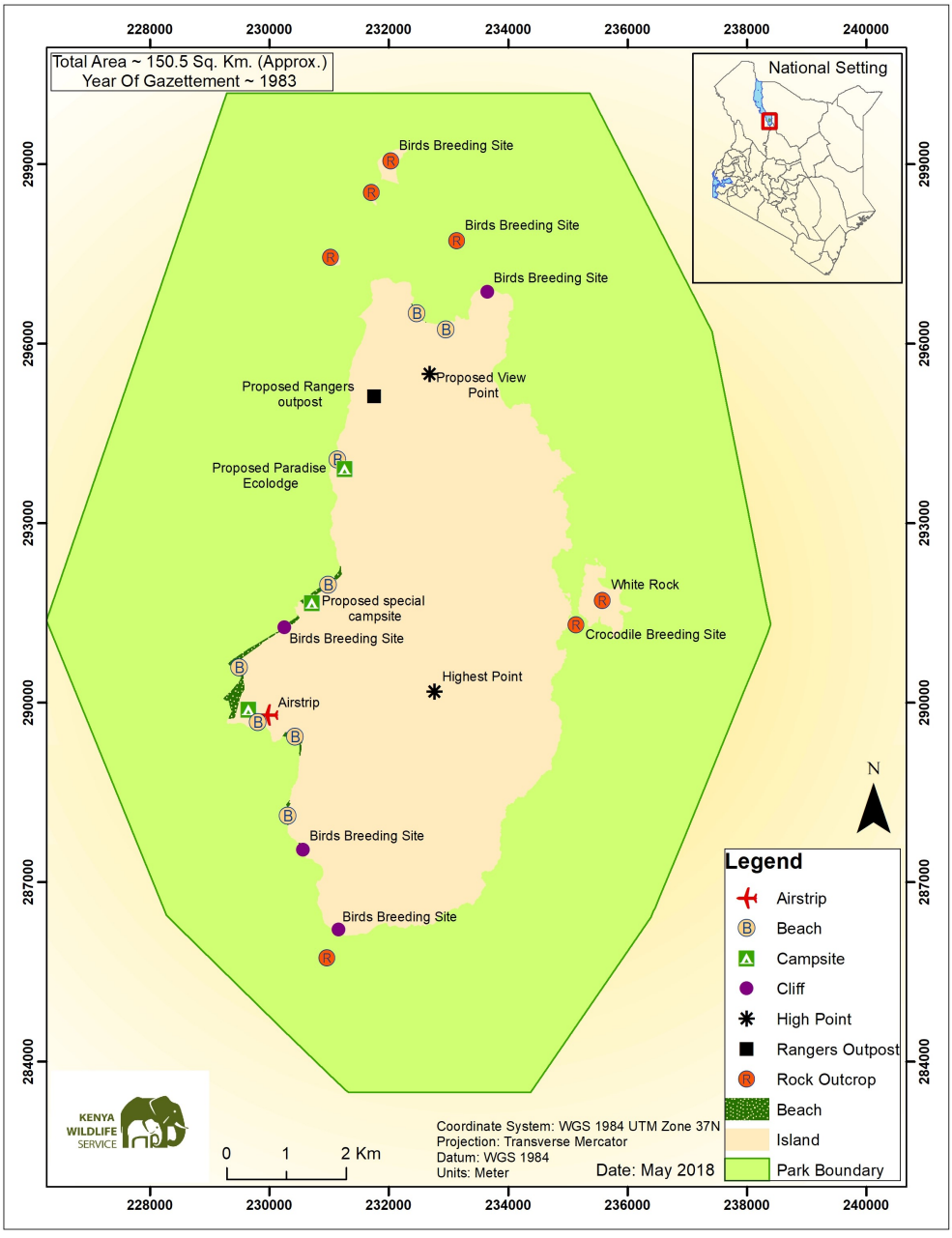

Figure 4: South Island National Park

LTNPs' Purpose Statement

The purpose statement summarizes the importance of the LTNPs. It clarifies the reasons for its existence, and provides the overall goal that LTNPs managers are working towards. The Purpose Statement is divided into a primary purpose followed by a series of supplementary purposes that expand on and complement the primary purpose. The primary purpose of the LTNPs is:

To conserve threatened and endemic species of the LTNPs and their associated habitats, and protect the rich prehistoric and cultural heritage values linked to the evolution of species, including humankind, for present and future generations

Supplementary purposes of the LTNPs are:

- ***To promote scientific research***
- ***To support stakeholder collaboration in conservation***
- ***To promote sustainable utilisation of cultural and natural resources***
- ***To promote conservation education and awareness***

The development of the above Purpose Statement was based on the identification of the LTNPs' "Exceptional Resource Values" (ERVs). These ERVs are discussed and elaborated in the following section.

LTNPs Exceptional Resource Values

The LTNPs' ERVs describe the area's key natural and cultural resources and other features that provide outstanding benefits to local, national and international stakeholders, and that are especially important for maintaining the area's unique qualities, characteristics and ecology. The following sections describe the LTNPs ERVs and their importance to the area. These sections have been set out according to the four categories of ERV identified: Biodiversity, Scenic, Social and Cultural (see Table 1).

Table 1: LTNPs Exceptional Resource Values

Category	*Exceptional Resource Value*
Biodiversity	• Distinct habitats of North Kenya
	• Wetland habitat
	• Grevy's zebra
	• Endemic fish, reptiles and amphibians[3]
	• Nile crocodile
	• Important Bird Area (IBA)
	• Northern masked weaver
	• Threatened large herbivores(Northern Topi (Tiang), • Oryx and gerenuk)
	• Large carnivores
	• Kaldera water fowl breeding site (near South island)
	• Unique Bats

[3] e.g. L. Turkana toad, Turkana mud turtle, Dwarf L. Turkana robber, Turkana perch, L. Turkana barb, large toothed Lake Turkana robber

Category	*Exceptional Resource Value*
Scenic	• Lake Turkana
	• Panoramic landscapes
	• Inselbergs
	• Crater Lakes (Central island)
	• Sand dunes (Central island)
	• Sandy beaches (Sibiloi and South Island)
	• Sister islands (South island)
	• Unique rocky outcrops (Namurutunga) also a cultural site
Socioeconomic	• Productive fisheries
	• Tourism
Cultural	• World Heritage Site
	• Prehistoric sites
	• Museum and *insitu* site exhibits (Koobi fora, Site Museums, desert museum
	• Rock art
	• The Marsabit Lake Turkana Cultural Festival, Kalacha Food festival and The Tobong'u Lore
	• Ethnic and cultural diversity (Turkana, Dasanach, Gabbra, Elmolo, Rendille,)

Biodiversity values

Diverse habitats

Sibiloi National Park is located in a semi-desert environment. Large trees and stands of diverse plant material can be found along the ephemeral riverbanks. The north-eastern shore of the lake is mostly rocky or sandy, with little aquatic vegetation. A delta system, in particular the Illeret delta, impacts the total vegetative biomass. Seasonal rains produce expansive areas of short grass around the deltas, but the seasonal rains are not dependable as drought conditions often prevail. The most common vegetation type is low density Acacia-Commiphora shrub land and yellow spear grass plains with higher-density strips of diverse vegetation along ephemeral streambeds. There is a range of sparse vegetation that makes up a mosaic of dry land types; semi-desert thorn bushes and small acacia trees dominate the Koobi Fora region. Table 2 summarizes vegetation zones in Sibiloi National Park.

Table 2: Different vegetation zones across the landscape facets in Sibiloi National Park[4]

Vegetation type	**Distribution**
Littoral/lacustrine zone	Close to the Lake Turkana and below 400 metres above sea level. Characterised by sedges, reeds and grasses along beach soils. In delta areas doum palms are present. The lake shore is mostly rocky or sandy.

[4] Ndiema, E. 2011. Unpublished PHD Dissertation.

Vegetation type	Distribution
Coastal/lake plains	Found between 400 and 450 metres above sea level and characterised by Acacia-Commiphora Shrubland-Grasslands
Tree-shrub savannah	These are found in well drained low-lying areas. It is characterised by bare highly permeable soils with many succulents.
Dry-land ephemeral riparian zones	Found at Illeret and Barahusuma close to water. Soils are a mixed of well clayey but well
High plateau escarpment	It is found between 450-600 meter zone. Experiences less grazing pressure because of lack of water.

Lakeshore riparian vegetation and reed beds at river deltas

The wetland habitats comprise Lake Turkana and its associated lake shore. These wetlands support high concentration of animals including mammals, birds, fish and invertebrates. They also serve as nurseries for many of these species. The riparian vegetation and Typha reed beds along the lakeshore and at the river mouths provide an important habitat for many species of birds[5]. Of note is the Northern Masked Weaver, *Ploceus taeniopterus*, a species with restricted distribution in Kenya. In 2016, one active breeding site was recorded north of Illeret village at the mouth of river Il Eriet. Apart from Lake Turkana, the only other known breeding sites in East Africa are on the shores of Lake Baringo and north of Lake Bogoria.

The inlets of Kerio and Turkwell rivers are important for both resident and migratory waterbirds as feeding sites. At the sheltered muddy bays of the Omo delta, at least 23 species, including Goliath Heron (*Ardea goliath)*, have been recorded to breed there. In 2013, significant flocks of Pink-backed Pelicans were recorded in the open waters near the delta. Despite the significant importance of these wetland habitats are threatened by overgrazing and flooding. These Lake Turkana wetland habitats therefore require serious immediate attention to reverse the situation.

Riparian corridors

These are of unique value as they are movement corridors for carnivores and other species. They are the most diverse habitat in SNP.

Species of interest

Grevy's zebra. Grevy's zebra (*Equus grevyi*) is uniquely adapted to arid and semi-arid habitats, which are not hospitable to the abundant common zebra. Grevy's zebras only survive in Kenya and Ethiopia's semi-arid lands yet they historically existed in Somalia, Djibouti, Eritrea and Sudan where they have gone extinct. Kenya's Grevy's zebras estimated national population of 2,400 is largely found on the shores of Lake Turkana, Samburu, Marsabit, Laikipia, Meru, Tsavo, Garissa and Naivasha.

The Wildlife Law lists the Grevy's zebra among endangered and protected species. The species is protected from any commercial use through its listing on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The species is also classified as endangered by the International Union for Conservation of Nature (IUCN). It is threatened by poaching for meat and unproven medicinal value, predation,

[5] Reason for which the Lake Turkana is listed as a Important Bird Area by BirdLife International. It should be noted, however, that the inclusion of Lake Turkana is based on bird counts conducted more than 30 years ago and little is known about the current state of waterbird populations.

reduced access to water resources and pasture, resource competition, invasion of invasive species and insecurity.

Endemic fish, reptiles and amphibians. Compared to other large African lakes, L.Turkana has relatively low fish species in total; the lake holds about 50 fish species, including 11 endemics, such as the cichlids *Haplochromis macconneli, H. rudolfianus* and *H. turkanae*, the barb *Barbus turkanae*, the robber tetras *Brycinus ferox* and *B. minutus*, the Rudolf lates *Lates longispinis*, and the cyprinid *Neobola stellae*. Non-endemics include species such as Nile tilapia, bichirs, the elephant fish *Mormyrus kannume*, *African arowana*, African knifefish, *Distichodus niloticus*, the Nile perch, and numerous others. The lake also has a large population of large water turtles, particularly around Central Island.

In regard to reptiles, the area is home to *Philocortus rudolfensis*, an endemic lacertid lizard that was only known from 6 specimens until now and the gecko *Hemidactylus barbierii* which was only discovered in 2007 and 2 specimens are known so far.

The area alos hosts amphiblians such as The Lake Turkana toad (*Sclerophys turkanae*) which is listed as Data Deficient in the IUCN Red List.

Nile crocodiles. The Nile crocodile is classified as Least Concern (LC) on the IUCN Red List. All populations are listed on either Appendix I or II of CITES. Although the current population status of the Nile crocodile in the LTNPs is not known, it is postulated that the population has been declining since the 1960s as a census carried out in the area in 1988 revealed that the population had declined by about 50%. Major threats include poaching, destruction of nests, and reducing lake levels.

Important Bird Area (IBA) and Migrant birds

Lake Turkana is considered one of the most important wetlands in East Africa because its shores are believed to hold more wintering wading birds than all the other Kenyan Rift Valley lakes. The lake is internationally recognised as an Important Bird Area (IBA) number 28, due to its significant congregations of waterbirds including; Pink-backed Pelican, *Pelecanus rufescens,* Lesser Flamingo, *Phoenicopterus ruber*, Spur-winged Plover, *Vanellus spinosus*, Ringed Plover, *Charadrius hiaticula*, Caspian Plover, *Charadrius asia*ticus, Kittlitz's Plover, *Charadrius pecuarius* and Little Stint*, Calidris minuta*.

The lake is important for migratory birds and every year, thousands of these birds spend their winter at Lake Turkana or use the site as a stopover on their movement further south. About 350 bird species have been recorded in the lake and its environs. They include over 84 species of water birds out of which 34 are Palaearctic or long-distance migrants such as Ringed Plover, *Charadrius hiaticula*, Caspian Plover, *Charadrius asiaticus*, and Little Stint, *Calidris minuta*. More than 10% of the entire East African/South East Asian population of Little Stints (more than 100,000 individuals) may winter here.

Several threatened bird species are also found in the area including: the regionally threatened African Skimmer, *Rynchops flavisrostris*, Great Egret, *Ardea alba*, Saddle-billed Stork, *Ephippiorhynchus senegalensis*, and Banded Snake Eagle, *Circaetus cinerascens*. Lake Turkana is frequently visited by specialist birding safaris whereby species of interest such as the Swallow-tailed Kite, *Elanoides forficatus,* Fox Kestrel, and *Falco alopex* are recorded. Some rare species easily seen in this area include Saddle-billed Stork, *Ephippiorhynchus senegalensis*, Banded Snake Eagle, *Circaetus cinerascens* and the African Skimmer, *Rynchops flavirostris.*

Birds with restricted range

The Northern Masked Weaver is a bird species in the Ploceidae family. It is found in the Democratic Republic of the Congo, Ethiopia, Kenya, and Sudan. In Kenya, the bird is restricted to Lake Baringo, the swamp to the North of Lake Bogoria and Lake Turkana. This is a bird with a very limited distribution. It is gregarious, nesting in colonies of up to 100 pairs; typically, this is at the water's edge and is generally during or close to the rains.

The area hosts several extremely rare species in Kenya more typical from northern latitudes. For example, in addition to the Northern Masked Weaver, the area hosts the only observations of Somali Bustard for Kenya, as well as other rare migrant species (less than 10 records in Kenya) like short-toed lark, lesser whitethroat, short-eared owl, and cream coloured cursor. Six vulture species, all highly threatened, are seen in the LTNPs, but are rare to see elsewhere in Kenya.

South Island National Park and the Kaldera Island

Kaldera is a rocky islet about 20 kilometres due north of South Island National Park. The rocky Island is an important breeding site for Great Cormorant, Reed Cormorant and Grey-headed Gull. During a recent survey carried out in July 2017 by KWS, over a hundred nests were observed. Most of the nests had eggs while others had hatched chicks. The site despite its importance is under no legal protection. Therefore, the breeding birds are facing imminent threats trampling on eggs by people and their sheep and goats because the island is used as a dry season grazing refuge by herders.

Figure 5: Cormorants breeding at Kaldera Island

Threatened large herbivores

The LTNPs hosts the Northen Topi (Tiang).This species remains widespread across sub-Saharan Africa, but has undergone substantial declines during the last 100 years. Total population size has been estimated at about 300,000. About 25% of these occurred in areas with reasonably good protection and management. There is no evidence at present to show that the overall decline has reached the 20-30% level over three generations (20 years) that would justify Near Threatened or Vulnerable status, but if declines continue it is only a matter of time before one of these thresholds is reached.

The area also hosts two Near threatened large herbivores: oryx and gerenuk.

Large carnivores

Sibiloi National Park is home to several large carnivores including lions, cheetahs, leopards, and both spotted and striped hyenas. Some of these species (e.g. lion) are of particular conservation value as their numbers have declined locally and nationally yet they are of economic value as they are key tourist attractions.

Unique bats

SNP is home to two rather unique, Data Deficient bats, *Rhinopoma maccinesi* and *Taphozous hamiltoni*, with no known distribution records elsewhere.

Scenic values

Lake Turkana

This is the most saline lake in East Africa and the largest desert lake in the world. The long body of Lake Turkana drops down along the Rift Valley from the Ethiopian border, extending 249 kilometres from north to south and 44 kilometres at its widest point with a depth of 30 metres. It is Africa's fourth largest lake, fondly called the Jade Sea because of its breathtaking colour. Three major rivers, Kerio, Turkwel and Omo, drain into Lake Turkana. Since it lacks an outlet, evaporation is the only means of water loss.

Panoramic landscapes

Despite the arid conditions, the land has an aesthetic value to it. It is a wilderness made up of the lake shore, savannah, volcanic terrain and riverine forest. There are four major inselbergs in SNP namely Derate, Koobi algie, Shin, and Mt. Sibiloi, which are very scenic.

Crater lakes

Central Island National Park is a volcanic island in the middle of Lake Turkana. It is composed of more than a dozen craters and cones, three of which are filled by small lakes. The two largest lakes partially fill craters up to a kilometre wide and about 80 m deep, the floors of which are near sea level.

The three Central Island scenic crater lakes include Crocodile, Flamingo and Tilapia Lakes, which are its major attractions.

Cultural values

Lake Turkana National Parks World Heritage Site[6]

Lake Turkana National Parks world heritage site comprises of Sibiloi, the South Island and the Central Island National Parks, covering a total area of 161,485 ha located within the Lake Turkana basin whose total surface area is about 7 million ha. The property represents unique geo-morphological features with fossil deposits on sedimentary formations as well as more than one hundred identified prehistoric sites. There are numerous volcanic overflows with petrified forests. The existing ecological conditions provide habitats for maintaining diverse flora and fauna. The island parks are the breeding habitats for the Nile crocodile *Crocodylus niloticus* and several snake species. The lake is also an important flyway passage and stopover for Palaearctic migrant birds.

Prehistoric research

The LTNPs, have over the years been a focal point for archaeological, paleontological, geological and ecological studies that have yielded a wealth of information related to human behavioural, biological, and cultural evolution as well as climate change. Research in the area has revealed a complex history of volcanism, and tectonics and sedimentary cycles preserving fluvial and lake phases of the basin. More than 50,000 fossil specimens have been collected from the Turkana basin and almost 20,000 from Sibiloi National Park and the outlying areas.

Prehistoric Sites

At Koobi Fora to the north of Alia Bay, extensive paleontological findings have been made, starting in 1972 with the discovery of *Homo habilis*. These are evidence of the existence of a relatively intelligent hominid two million years ago. It also reflects the change in climate from moist forest grasslands when the now petrified forests were growing to the present hot desert. These petrified forests are found both inside Sibiloi National Park and its adjacent areas.

The human and prehuman hominid fossils include the remains of four species, the most important being the 1999 discovery of 3.5 million-year old *Kenyanthropus platyops* along with other several ancestors of modern animal species. Over 100 prehistoric sites have been discovered so far. Indeed, this is the only prehistoric conservation area in Kenya gazetted as a National Park. The geology and fossil record represents major stages of earth history including records of life represented by hominid discoveries, and presence of recent geological processes represented by volcanic erosion and sedimentary landforms.

[6] Sibiloi and Central Island National parks were listed by UNESCO as World Heritage Sites in 1997 and in 2002 the property was extended to include South Island National Park and the property renamed The Lake Turkana National Parks World Heritage Site. The property is listed under Criterion (viii) and (x) of the *Operational Guidelines for the Implementation of the World Heritage Convention (2005).*

- Criterion (viii): to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features.
- Criterion (x): to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

The Turkana Boy site: Among the major hominid discoveries in prehistoric research in Turkana basin include the famous *Homo erectus* fossil also referred to as the "Turkana boy" or "Nariokotome Boy". This is the most complete early human skeleton ever found, and its significance lies on the fact that it represents the evolutionary developments that distinguish the early humans from the early hominids that preceded them. It had a large brain, modern upright walking gait and seemed to have inhabited wet and humid environment.

Another important prehistoric site in the LTNPs influence zone is Lomekwi. This is an archaeological site that has yielded evidence of the earliest stone artifacts dated at 3.3 Million years. Lomekwi lithic artefacts represent the earliest hominin technological behaviour and the oldest stone tools in the world. This discovery affirms LTNPs in a global map not only as the cradle of human kind but also as the cradle for technological innovation.

The stone pillar sites locally referred to as Namoratunga are found at Kalokol, Lothagam (Kerio) and Lokori (Moruleum).They were built by middle Holocene peoples of the Turkana Basin and provide evidence of the earliest known example of monumental architecture in East Africa. Radiometric dates place pillar site construction and use ~5000-4000 cal. BP. This social innovation occurred during a period of marked environmental and economic change and represent evidence of social complexity and stratification.

Material culture recovered from the pillar sites suggests that they supported diverse commemorative practices including, but not limited to, the mortuary sphere, and that they may have been built and used by multiple social groups. The sites are still sacred to the local Turkana community.

Along the eastern shores of the lake, important prehistoric discoveries have also been made. At Illeret, the oldest evidence of an essentially modern human–like foot anatomy, has been recorded. The size of the Illeret footprints is consistent with stature and body mass estimates for *Homo ergaster/erectus*, and these prints are also morphologically distinct from the 3.75-million-year-old footprints at Laetoli, Tanzania. The Illeret prints show that by 1.5 Million years ago, hominins had evolved an essentially modern human foot function and style of bipedal locomotion.

Other important hominid discoveries in the LTNPs area include KNM-ER, 1470, 1808, 62000, and 62003 dated between 1.7 and 1.9 million years ago and provides evidence of species diversity marked by differences in cranial size and facial or masticatory adaptations. These fossil finds confirm the presence of contemporary species of early Homo, in addition to Homo erectus, in the early Pleistocene of LTNPs.

From the Holocene deposits geologically referred to as the Galana Boi Formation, there is evidence of the earliest evidence of livestock domestication. The site with a substantial sample of domestic animals securely dated in Eastern Africa is Dongodian in area 102 near Koobi Fora, with cattle and small stock dated at circa 4,000 years ago. However, large quantities of fauna remains from domestic cattle and sheep/goat dating between circa 5,000 and 4,000 years ago have been found at Jarigole pillar site, Lothagam, Dongodien, Kalokol, Illokeridede, and Illeret.

Museums

Koobi Fora Site Museums. This site museum has three components. The first one is the main site museum located at the Koobi `Fora ridge and overlooking the lake. The second are the crocodile and tortoise sites which are i*n-situ* exhibits and third is the elephant site pre-

senting a complete elephant skeleton. The Koobi Fora site Museum also presents cultural materials of ethnic groups and an overview of the prehistoric research finds from the area.

The Loiyangalani Desert Museum - This museum, opened in June 2008, is located on top of a hill, with a backdrop of the picturesque Lake Turkana. It is a fusion experience that interprets and showcases the rich cultural splendour of the eight communities living around Lake Turkana.

Rock Art. In the greater LTNPs, there is rock art along the eastern shore of Lake Turkana on hills and on the sides of Wadis, while other important engravings are found between Kalacha and the Huri Hills. Images of animals such as giraffes, elephants, antelopes, ostriches, camels, human figures and geometric designs have been chipped onto the rock surfaces. Most images are relatively small, about 30 cm in height and are fairly crudely engraved. Style and content suggest the engravings are an extension of the art found further north in the Sahara Desert. The age of the engravings is not known, although they are believed to be between 500 and 2,000 years old.

Cultural diversity and the annual Lake Turkana Cultural Festival

Lake Turkana Cultural Festival. This is an annual festival held to celebrate the diverse and rich cultural splendour of the communities living in the area, namely El Molo, Rendille, Samburu, Turkana, Dasanach, Gabra, Borana, Waata and Burji. Over the years this unique cultural festival has become an important cultural event in Kenya's annual calendar. The Festival creates a platform for cross-cultural interaction, cooperation and exchange among the nine different ethnic communities present at the event. In addition, it helps to overcome stereotypes and creates a mutual understanding of different cultures to promote peaceful coexistence.

The Tobong'u Lore is a tourism and cultural festival held annually to promote local culture and tourism within the region. . Tobong'u Lore means welcome back home. The also brings participants from neighbouring countries to foster peace, and social cohesion and economic development.

The Kalacha Food Festival is organized by Kivulini Trust to bring together communities practising diverse economic activities such as pastoralism and fishing to promote cultural diversity, social harmony and sustainable development. The festival features exhibition of traditional foods, medicinal plants and the art to demonstrate traditional technology and innovation.

Major Management Issues of Concern

Damming of inflowing rivers and upstream use of waters

The major rivers flowing into Lake Turkana are being gradually dammed and an ever-increasing amount of the water that used to flow into the lake is being used upstream for irrigation and other domestic uses. The Omo River, which runs through Ethiopia, accounts for about 90 percent of the lake's inflow. However, it is being transformed through the construction of a series of dams. Three of the five dams have been completed. By 2024, it is anticipated that irrigated sugar plantations along the river would use more than 16 percent of the basin's water, leading to an 8.4-metre reduction in the lake level.

Changing seasonality and nutrient status of inflowing waters

The loss of seasonality in water inflow resulting from dams on all the lake's rivers will reduce the extent and quality of floodplain vegetation. This will negatively impact on the ecology of aquatic habitats that are important fish-spawning sites. More importantly, river-borne silt that would have enriched the floodplains, delta and lake will be deposited in the dams, with major ecological implications for the Lake Turkana ecosystem and biodiversity.

Over-grazing by livestock

Illegal grazing in Sibiloi National Park has detrimental effects on the ecological as well as cultural resources. The act affects a large part of the park permanently, resulting in overgrazing, trampling of vegetation and an increase in woody vegetation. Unfortunately, even the rich archaeological resources, which are widely distributed in the park and are yet to be discovered, are also impacted negatively mainly through the trampling. Furthermore, grazing along the lake's shores affects important breeding areas for shoreline birds and crocodiles. There is hope, however, as during the national park establishment process, the pastoralist community was guaranteed grazing and watering rights in times of extreme drought. Hence, what is needed is a grazing management system that ensures a balance between the community and conservation interests. To address the grazing problem, the pastoral Dasanach community who reside in the land bordering the park to the north and northeastern sectors, and who are responsible for much of the grazing in the park, were assisted in developing a grazing plan in 2013. This plan should be implemented to avert continued degradation of biodiversity and cultural resource values.

Drought and climate change

Between 1975 and 1992, the lake's water levels dropped by about 10 metres. This was partly because of drought in the catchment regions. Usually, routine droughts exacerbate the problems associated with upstream use of water, denying the lake the fresh water needed to compensate for evaporation losses (since the lake has no outflow). In addition, the salinity of the lake can be expected to increase further due to increased evaporation if global warming leads to a general rise in temperatures around the lake.

Poaching

Wildlife populations seem to be declining. The few remaining large mammals are concentrated in the most secure parts of the SNP, a signal that poaching is turning out to be a serious threat to the ecosystem. A testimony to this has been the gradual disappearance of flagship species such as the reticulated giraffe. Grevy's zebra, too, are rarely seen while illegal fishing is taking place in fish breeding areas. Indeed, disturbance by fishermen on Central Island has reportedly caused the abandonment of the only known breeding site for African skimmers, a regionally-threatened bird. However, there are no fish stock assessment data to enable clear evaluation of the broader impact of over-fishing on the fisheries resource. But by induction, over-fishing threatens endemic fish species, particularly when these are removed without robust control mechanisms, as well as the populations of crocodiles and fish-eating birds that rely on fish for food. Furthermore, crocodiles are impacted through destruction of their nesting sites by fishermen at all the three LTNPs.

Unclear management responsibilities on protection and preservation of cultural heritage in Sibiloi National Park

Sibiloi National Park was first gazetted as a national park in 1973 and secondly as a monument through a legal notice number 1517 of 27th May, 1982. As such, the management of the park is carried out in an ambiguous way. The National Museums of Kenya is mandated to collect, preserve, study, document and present Kenya's past and present cultural and natural heritage. In the case of LTNPs, NMK's role is to manage prehistoric resources whereas KWS is mandated with the management of the protected area including all maintenance of infrastructure and security. Both organisations are involved in tourism development and management. This results not only in confusion in management, but conflict in revenue collection, implementing research priorities and entering into contractual agreements with partners.

Lack of a unified management structure for the LTNPs

Although the LTNPs is listed as a serial World Heritage Site with three components by UNESCO, there is no overall KWS manager responsible for management of the three sites. The Park Warden of Central Island National Park reports to the Warden- Lodwar Station who in turn reports to the Assistant Director, Western Conservation Area based in Kitale. Similarly, the Park Warden of South Island National Park reports to the Assistant Director- Northern Conservation area based in Marsabit. On the NMK side, there is no clear reporting structure with regards to issues that can be solved administratively from the Directorate of Antiquities Sites and Monuments and those that can be addressed by the National Repository for Research and collections. This has resulted in delays especially on issues that affect prehistoric resources. With this kind of fractured management structure in the LTNPs it is difficult to have synergy in the management of the LTNPs components. Therefore, there is need to have a unified management structure for the LTNPs for effective management.

Remoteness of the area

The remote areas of LTNPs are mainly inaccessible and without any tourism supporting infrastructure. Most of the remote areas have remained unexplored despite the many unique attractions. The harsh climate and lack of portable water has also limited the number of tourists who are willing to venture into such areas.

Lack of stakeholder engagement forums

There is no stakeholder forum to encourage stakeholder participation in the management of the LTNPs. Such a forum should be encouraged to catalyse coordination of tourism, research and infrastructure development activities in the LTNPs.

LTNPs Zonation Scheme

PA Zoning Scheme

The PA zoning scheme is an integrated approach to the classification of land and water areas in a protected area. Areas are classified according to the need to protect the ecosystem and the PA's natural and cultural resources. Particular types of zones needed for an area are contingent on the issues and opportunities in the area concerned including the area's capability of and suitability for providing opportunities for visitors. Typical uses of a zonation scheme include, for example, fostering better patterns of visitor use throughout an area, or providing the framework for the decentralisation of an area's management. In this regard the PAPF prescribes dividing large conservation areas into Management Zones for ease of management. And to facilitate allowable land uses in a PA such as visitor use, visitor use zones, (High Use, Low Use, and Wilderness zones), are also defined. Other zones are also defined to offer protection to critical habitats such as wildlife breeding areas or environmentally sensitive areas, and to provide an area where the PA can interact with adjacent communities and influence them to support conservation efforts of the PA. Zones in LTNPs have therefore been developed in accordance with the PAPF specifications and are defined in the following sections.

LTNPs management sectors

This Plan proposes that the three National Parks comprising the Lake Turkana National Parks World Heritage Site are placed under a unified management structure. To achieve this, and in line with the KWS Management Sector Strategy, each of the three parks is considered as a Management Sector (Management Zone) overseen by a Junior Warden who reports to a Senior Warden who is the overall officer in-charge of the three parks. The three Sectors are Sibiloi National Park; Central Island National Park and South Island National Park. Further, Sibiloi National Park is divided into 3 security sectors to ensure that the entire park is secure (see figure 6).

Table 3: LTNPs Management Sectors and Administration Centres

Management Sector	*Headquarters*	*Sub-station/outpost*
LTNPs	Alia Bay	
Sibiloi	Alia Bay	Kokai, Karsa
Central Island	Kalokol	Eliye springs, Temporary security outpost at Central Island
South Island	Loiyangalani	Temporary security outpost at South Island

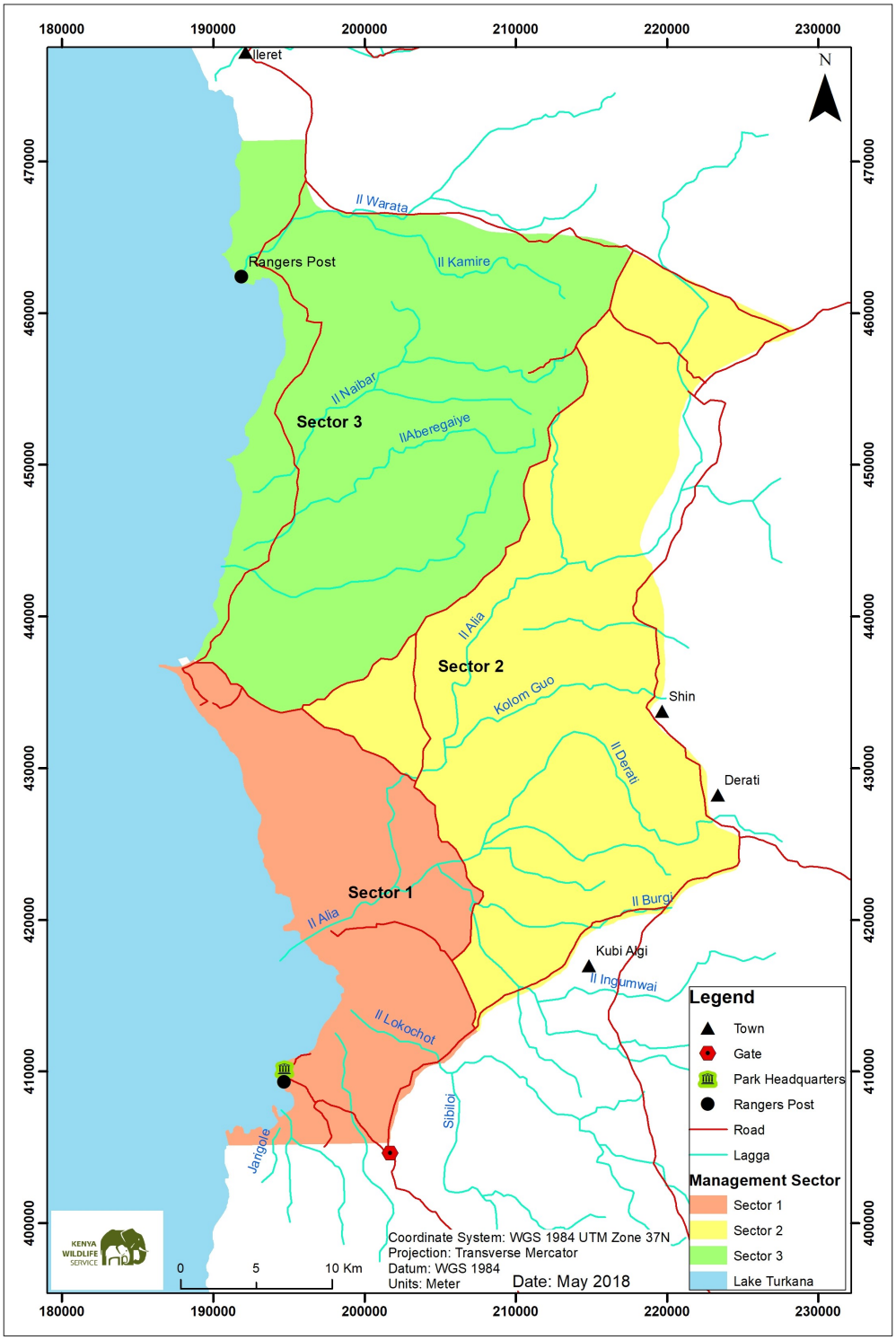

Figure 6: SNP Security Sectors

LTNPs Land Use Zoning

The land use zones in the LTNPs include zones that aim to protect sensitive habitats, wildlife breeding areas and fragile cultural resources; those that aim to optimise visitation patterns across the area; and those that seek to promote positive PA-community interactions. All the three parks have an aquatic component comprising Lake Turkana waters. A two-kilometre-wide belt from the lake shore in Sibiloi National Park and a similar belt surrounding the Central and South Island National Parks has been designated as a Restricted **Zone** to offer protection to fish breeding areas; feeding habitats for Nile crocodiles; breeding sites for birds, and resting areas for hippopotamuses (in Sibiloi NP). This zone will also include riparian corridors, nesting shores, and some rocky outcrops. On the other hand, two visitor use zones, **Low Use** and **Wilderness Zones** have been provided to support different levels and types of visitor use. Finally zones for PA-Community interactions have been provided in community land whose inhabitants interact with the PAs. Figure 7, 8 and 9 show land use zones for the three Lake Turkana National Parks while table 4 gives the zone descriptions, and visitor activity and accommodation prescriptions for each zone.

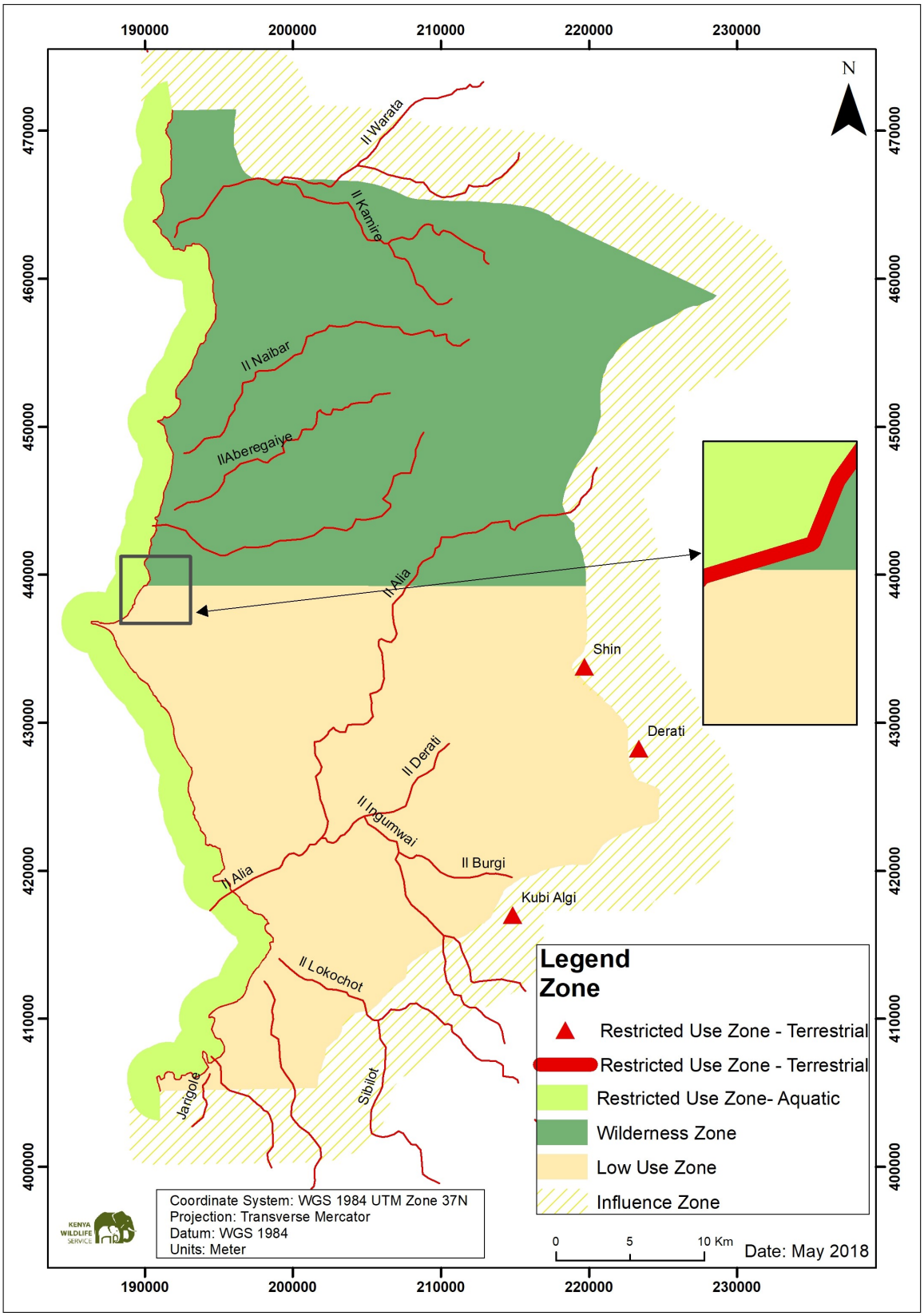

Figure 7: Sibiloi National Park Land Use Zones

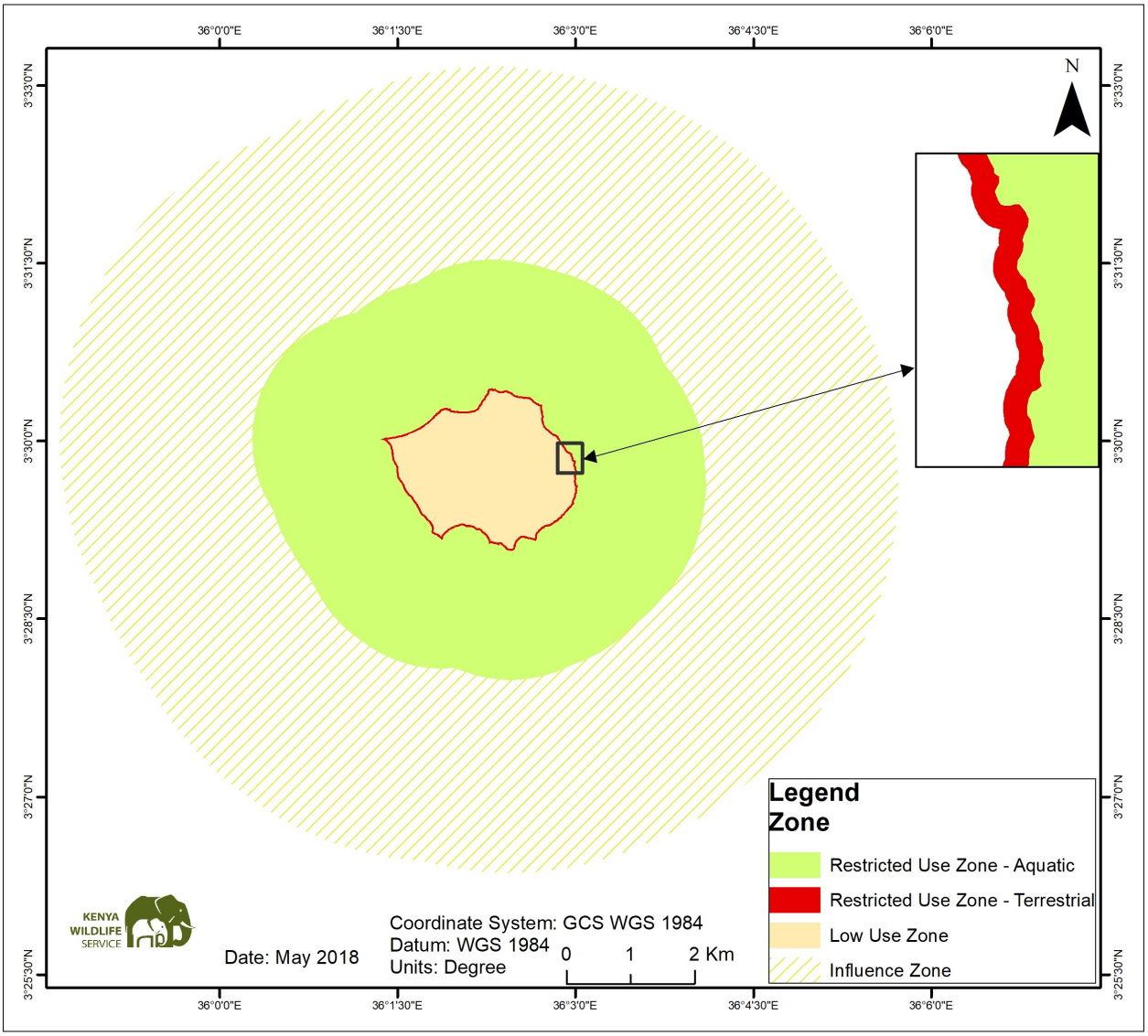

Figure 8: Central Island National Park Land Use Zones

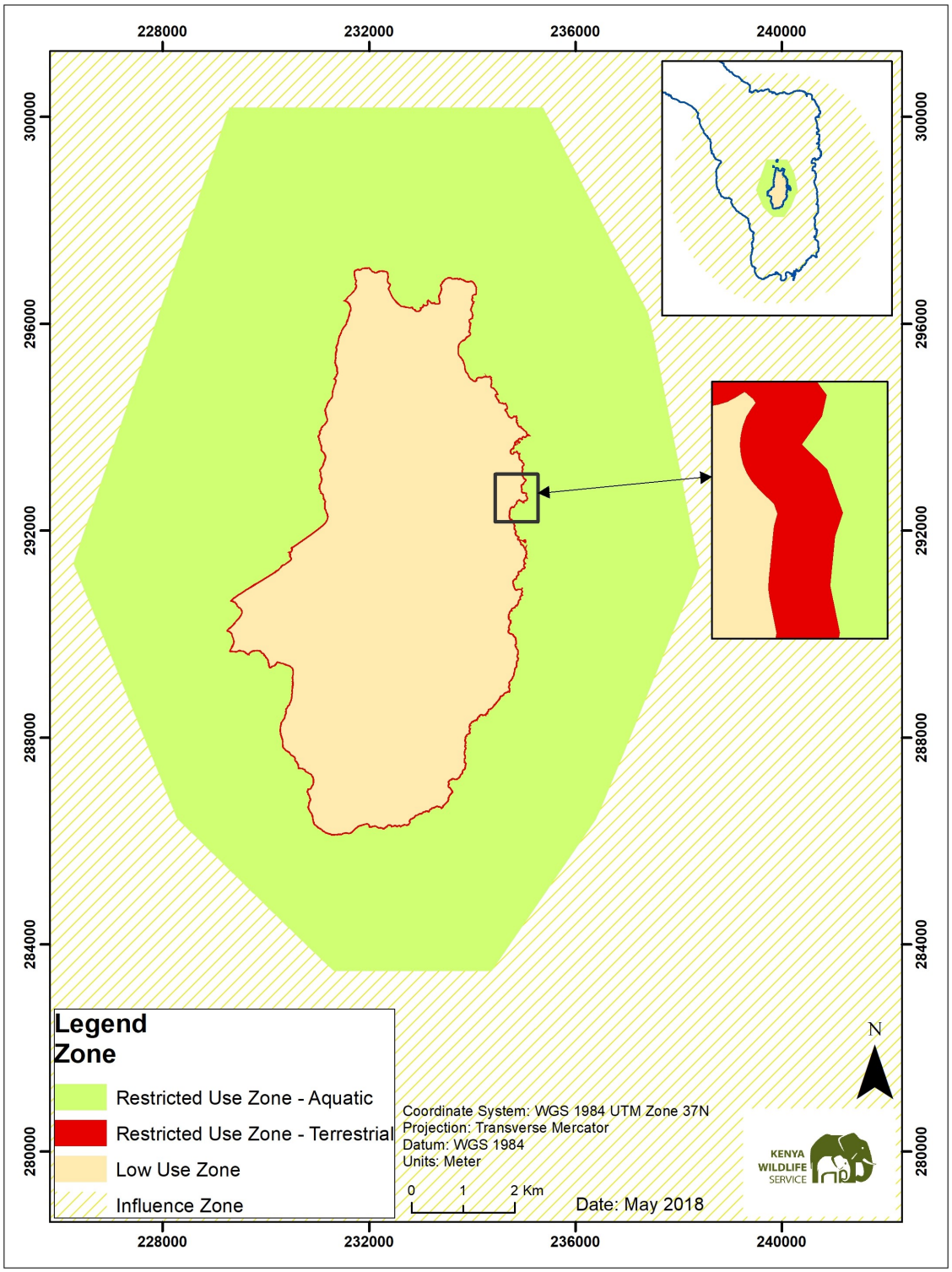

Figure 9: South Island National Park Land Use Zones

Table 4: LTNPs Land Use Zone Descriptions and Prescriptions

Zone	Zone description	Activity prescriptions	Accommodation prescriptions
Restricted Zone	This zone covers a two-kilometre wide belt of Lake Turkana waters in Sibiloi National Park (SNP) and a similar belt surrounding the Central Island National Parks. In South Island National, it includes the aquatic component of the park. This is an important breeding area for fish and habitat for the Nile crocodile. The sandy beaches that are important breeding areas for the Nile Crocodiles and lacustrine grasslands that are herbivore foraging areas and water bird breeding areas are also included in this zone. It also includes riparian corridors sustained by seasonal rivers, rocky outcrops, hills, and Prehistoric sites and fossil exposures in SNP.	▸ In Lake Turkana waters, this is a "no take Area" where fishing is not allowed. However, boat safaris and sport fishing are allowed. ▸ In the prehistoric sites access is allowed with authorization by the Curator, Koobi Fora Museum. ▸ Research and monitoring activities are allowed. ▸ Any other water sport activities (windsurfing, parasailing, paddle boating)	No accommodation facilities are allowed in this zone
Low Use Zone	In SNP this zone covers the southern half of the Park. The zone is not currently heavily used by visitors, although it has significant tourism potential given that most of the tourist attractions such as wildlife, archaeological sites and accommodation facilities are concentrated here. The zone is defined by the Sibiloi National Park boundary to the south, east, and west and to the north the Karari-Koobi Fora road junction marks the northern extent. In Central Island National Park and South Island National Park, this zone covers the terrestrial component of the Parks.	▸ Game drives in SNP ▸ Night game drives In SNP ▸ Short walks ▸ Walking safaris ▸ Camel safaris ▸ Birding ▸ Cycling	Permitted facilities include ecolodges of maximum 30 bed capacity; KWS Bandas, public campsites; special campsites; Tented camps maximum 12 beds; Star beds.
Wilderness Zone	This zone covers the northern half of Sibiloi National Park from the Karari-Koobi Fora road junction. The northern, eastern and western boundaries of this zone follow the park boundary. It has few roads and only one special campsite, Karari campsite.	In this zone visitors have an opportunity to experience adventure, remoteness and solitude. Visitor activities are limited to: ▸ Guided short walks ▸ Guided walking safaris ▸ Guided drives ▸ Camel safaris ▸ Research tourism	Only special campsites are allowed in this zone. However, an ecolodge is proposed at Kokai area which will be rezoned as Low Use zone.

Zone	Zone description	Activity prescriptions	Accommodation prescriptions
Influence zone	This zone covers the community land that is within 5 Km from the Sibiloi National Park boundary. It also covers Kalokol and Loiyangalani centers whose communites fish in the waters around Central and South Island National parks respectively. Further, Kaldera Island, which is a critical waterfowl breeding area for birds of South Island National Park, is in this zone.	▸ There are no restrictions on visitor activities since these are human settlement areas. ▸ Management will mainly focus on conservation education and outreach activities ▸ The LTNPs management will engage with communities on protection of important non protected areas and the quality of tourism development. ▸ Establishment of protected areas such as conservancies and sanctuaries will be promoted.	All types of visitor facilities are allowed subject to approval by County Government, the local community and the National Environmental Management Authority(NEMA)

Ecological Management Programme

Programme Purpose and Strategy

The purpose of the Ecological Management Programme is to ensure that:

> The conservation of the LTNPs natural environment is enhanced, through improved ecological monitoring, applied research and targeted management interventions

The LTNPs, and Sibiloi National Park in particular, has experienced major ecological changes over the years with drastic decline in populations of species such as the Grevy's zebra and local extinction of the reticulated giraffe. The depletion of species population is attributed mainly to human related threats such as poaching for bush meat as well as trophies and increased competition between livestock and wildlife for forage. In addition, damming of inflowing rivers such as Omo and Turkwel and increased upstream use of river water for irrigation and domestic use is reducing the flow into Lake Turkana's ecology. Other threats to the ecology of LTNPs include changing seasonality and nutrient status of inflowing waters, drought and climate change, over-grazing by livestock, over-fishing around Lake Turkana, and tree-cutting. Managing human-induced threats on the LTNPs ecology, and balancing the competing needs of environmental conservation and human development needs, are perhaps the greatest challenges facing the management of the LTNPs over the lifespan of this management plan. The Ecological Management Programme will have a crucial role to play in spearheading the management response to change, by providing the ecological information needed to understand the underlying factors driving change, and by designing and coordinating the implementation of targeted and appropriate management interventions to address the most significant emerging threats to the area's exceptional resource values.

The following section sets out the guiding principles that describe key factors taken into account in the development of the Ecological Management Programme and that will influence the way the programme is implemented in achieving the Programme Purpose.

Guiding principles

The guiding principles for the Ecological Management Programme are:

- **Improving and maintaining ecological integrity**
- **Maintaining habitat connectivity with surrounding areas**
- **Enhancing conservation and protection of species of conservation concern**
- **Maintaining the balance between conservation and development**
- **Monitoring and understanding ecological trends and threats**

These guiding principles are briefly described and explained in the following paragraphs.

Improving and maintaining ecological integrity

In implementing its core mandate of conserving wildlife biodiversity, KWS gives first priority to improvement and maintenance of ecological integrity. This ensures that national parks remain unimpaired for the benefit of present and future generations. Under this management programme, KWS will subject all proposed developments and activities within the LTNPs to environmental impact assessments as specified by EMCA, 1999 to identify, evaluate and mitigate any potential adverse environmental effects.

The ecological integrity of the LTNPs faces a number of challenges including livestock grazing, excessive water abstraction, water pollution, and global climate change, all of which contribute to degradation of LTNPs ecosystem. Whereas some of the challenges can be addressed effectively by KWS, others like excessive water abstraction and damming of rivers require concerted efforts to resolve. Under this programme, efforts will be made to minimise impacts arising from human related ecological threats.

Habitat connectivity with surrounding areas is maintained

The nation has committed itself to conserve wildlife corridors and migratory routes for the maintenance of protected areas. According to the Wildlife Act 2013, section 65 (4) (c), "*a wildlife conservation order or easement may be created so as to create or maintain migration corridors and dispersal areas for wildlife".* In addition, one of the Kenya Vision 2030 flagship projects for the environmental sector is "*Securing the Wildlife Corridors and Migratory Routes Initiative"*. Further, according to the KWS strategic plan, one of the initiatives that will be implemented to enhance ecological integrity is *engagement and collaboration with stakeholders to secure wildlife corridors and dispersal areas*. As such, as part of efforts to re-establish and conserve natural population dynamics and processes, and provide for species range shifts due to climate change, management activities under this programme will aim to perpetuate the unrestricted dispersal of animals into areas outside of the Sibiloi National Park.

Several wildlife species such as Oryx in Sibiloi National Park depend not only on the conservation of suitable habitat within the area, but also on habitat connectivity with surrounding areas. Home ranges of most carnivores also extend beyond the park boundaries into community land.

Enhancing conservation and protection of species of conservation concern

The LTNPs is home to threatened aquatic and terrestrial animals. Some of the prominent ones include Gerenuk and Oryx that are classified by IUCN as near threatened; and lion and cheetah that are classified as vulnerable. It also hosts endemic fish, reptiles and amphibians. However, the population status of these species is largely unknown despite their conservation importance. On the other hand, the biodiversity importance of Sibiloi NP as well as the other two parks (CINP and SINP), however, may lie in the less charismatic, small mammals, birds or herptiles that are least studied. The study and protection of these less known species will require focus on particular areas, including the larger seasonal rivers (important for large mammals, carnivores, bats, birds and reptiles), the escarpments at Petrified Forest site, and the wetlands.

As such, a guiding principle of the Ecological management Programme is to enhance the conservation of these species to maintain the ecological character of the area. This will be

carried out in line with the species-specific national strategies that have been developed for species of special concern.

Maintaining the balance between conservation and development

A particular area where the Ecological Management Programme will need to provide leadership is in understanding and maintaining an appropriate balance between the need to maintain ecological integrity of the LTNPs on the one hand, and the need to permit rational and appropriate development of the protected areas on the other. The Protected areas have a limited capacity to withstand use. Visitor use and facility development should therefore be compatible with PA goal of maintaining ecological integrity. For example, as detailed in the Tourism Management & Development Programme, tourism in the LTNPs has the potential of making a significant economic contribution towards the costs of conserving and managing the extensive land area that comprises the LTNPs, as well as demonstrating that the LTNPs is being actively used for the benefit of Kenyans nationwide. However, inappropriate tourism can severely undermine the exceptional natural resources upon which the tourism industry depends, and which provide other benefits to the nation. A guiding principle for the Ecological Management Programme will be to both understand the delicate balance between conservation and development in the area, as well as to design and implement management actions to maintain this balance.

Monitoring and understanding ecological trends and threats

The LTNPs comprises of a diverse array of habitats and landscapes, ranging from aquatic habitats in Lake Turkana to arid grasslands and woodlands in the terrestrial parts of the national parks. These habitats and their associated wildlife species are currently experiencing a wide variety of threats that have potentially important consequences for the natural ecology of the area. Developing appropriate management responses to address these threats and to mitigate changes in the ecosystem depends in the first instance on the availability of information about the nature of, and trends in, the human related pressures concerned (livestock grazing, illegal fishing) as well as on how these pressures are altering ecological regimes in the LTNPs. A major role of the Ecological Management Programme over the lifespan of this management plan will therefore be to ensure the provision of appropriate and timely information on the changing ecology of the LTNPs, the factors driving change, and the appropriate management responses to influence or adapt to change.

Given the high and increasing human pressures the LTNPs is facing, particularly through livestock grazing, the monitoring of trends in the status of the most important features of the LTNPS ecology, and the major threats impacting, or with the potential to seriously impact, on these features is a high priority during the lifespan of this management plan. In addition, ecological monitoring will be designed and implemented in such a way as to provide a firm foundation for adaptive management and for measuring management effectiveness.

Targeting ecological management action

The PAPF prescribes the use of the ***Nature Conservancy's (TNC) Conservation Action Planning (CAP)*** process as a foundation for designing the PA plan's Ecological Management Programme. The rationale underlying this is that, with limited human and financial resources available to PA managers, it is impractical to attempt to manage and monitor every single aspect of the complex ecology of a protected area. The CAP methodology provides a tried and tested mechanism for targeting ecological management, by identifying and develop-

ing an accurate definition and understanding of the PA's most important ecological features and their management needs, and the major threats to these features. In line with the PAPF, this programme also adopts the CAP framework.

The PAPF identifies three main stages in applying the CAP methodology: the selection of ***conservation targets***; the identification and ranking of ***threats*** to the conservation targets; and the development of ***management objectives and actions*** to address these threats as well as to enhance the conservation targets. These key stages and their application in the LTNPs planning process are elaborated in the following sections.

Conservation targets

The first step of the CAP process is the definition of a small number (usually about eight) of **conservation targets** which represent and encapsulate the unique biodiversity contained within the protected area, as well as any ecological features that may require specific management actions (such as particularly endangered species or habitats). A comprehensive ecological definition and understanding of each of these targets is then achieved through the further identification of the "***key ecological attributes***" (KEAs), which are the ecological parameters upon which long-term survival of each conservation target depends. Common examples of KEAs include: essential habitat requirements of a particular species; keystone species for a specific habitat; or ecological connectivity requirements. The ten LTNPs conservation targets, the rationale behind their selection, important subsidiary targets (i.e. other ecosystem components that share KEAs and threats with the conservation target concerned), and the KEAs for each target are set out in **Table 5**. Although conservation target, **Archaeological sites** is not a biological resource, it has been included because of the outstanding universal value of prehistoric resources at LTNPs.

Table 5: LTNPs Conservation targets

	Conservation target	*Rationale for selection*	*Important subsidiary targets*	*Key ecological attributes*	*Indicators to be monitored*
Systems	***Lake system***	▸ A vital resource in the LTNPS, and essential for the survival of the LTNPS fish and wildlife population, livestock and local community ▸ The lake is part of the African Eurasian migratory flyway and host a large crocodile population. ▸ It is under threat from upstream damming of the Omo river system ▸ Key habitat for characteristic fauna of lake Turkana ▸ Important Bird Area(IBA) ▸ highly productive zone, ▸ very sensitive to the forecasted lake level	▸ Fish species (*Tilapia, Nile perch*, mud fish, cat fish), Endemic fish species ▸ Reptiles and amphibians (e.g. Nile crocodile, terrapin) ▸ Riparian vegetation ▸ wetlands ▸ Riparian bird species ▸ Hippopotamus	▸ Water quality ▸ Water quantity ▸ Fish species composition and size ▸ Crocodile population ▸ Water birds species composition and numbers	▸ Water quality, siltation ▸ Fish stocks (abundance, diversity, size distribution, diversity) ▸ Fish (diversity and abundane indices)
Community	***Littoral zone(wetlands)***	▸ Key habitat for the Nile crocodile, fish, water birds and Hippos. ▸ Breeding area for fish ▸ Key habitat for characteristic fauna of lake Turkana ▸ Very sensitive to the forecasted lake level changes, siltation and over-fishing. ▸ endemic and vulnerable species (soft shell turtles) and water birds of international importance, waders especially, but also colonial water birds (bird colonies are particularly sensitive to disturbance and environmental change).	▸ Nile Crocodile ▸ Fish ▸ Hippopotamus ▸ Colonial Water birds ▸ Waders ▸ Soft shell turtles ▸ Macrophytes (e.g. Hippo grass, sedges)	▸ Fish population structure and species composition ▸ Bird population and species composition ▸ Water quality	▸ Water level seasonality ▸ Water birds (diversity and abundance indices, monitoring breeding colonies) ▸ Fish (diversity and abundane indices)

Conservation target	Rationale for selection	Important subsidiary targets	Key ecological attributes	Indicators to be monitored
Lacustrine grassland	▸ It forms a belt around the lake and is a transition zone between the lake and bush land. ▸ It is feeding ground for grazers; it has the highest density and diversity of wildlife. ▸ It is threatened by livestock incursion. ▸ Probably the most impacted habitat in SNP, particularly through livestock grazing but also poaching. ▸ A unique environment in these semiarid lands, owing its presence to the existence of the lake.	▸ Warthogs ▸ Grazers (e.g. grant gazelles) ▸ *Sporobolus sp* ▸ Plains zebra ▸ Topi ▸ Diurnal raptors (Grevy's zebra	▸ Extent of grassland ▸ Grazers species composition and size	▸ Productivity (e.g. estimated remotely) and herbaceous biomass ▸ Extent (remotely) ▸ Floristic diversity and Seed bank ▸ Soil Ph and compaction (particles) ▸ Grassland degradation index ▸ Bare ground (end of grazing season) ▸ Livestock trampling
Acacia-Commiphora bushland-grasslands	These are the predominant habitats in the LTNPS. They are threatened by livestock incursions, tree cutting by the local communities. This is the dominant habitat in the LTNPS, although it has heterogeneous distribution of dominant woody species, and the threats from livestock incursion are also patchy. This habitat supports several species classified as vulnerable by IUCN (Gerenuk, Oryx, and Somali Ostrich, Kori and Arabian Bustards). It is also were all the different species of vultures have been seen, all of them classified as endangered or critically endangered by IUCN.	▸ Browsers: lesser kudu, Dikdik, gerenuk, ▸ Grazers: zebra, oryx, ▸ Birds:kori and Arabian bustard, secretary bird, ground horn bill, Somali Ostrich ,Vultures	▸ Extent of bushland and grassland ▸ Ratio of woody-grass species ▸ Forage quality and quantity ▸ Ungulates species composition and size	▸ Bush encroachment ▸ Bare ground ▸ Dominant woody species (extent) ▸ Herbacious biomass

	Conservation target	Rationale for selection	Important subsidiary targets	Key ecological attributes	Indicators to be monitored
	Riparian Habitats	▸ The habitat hosting most diversity accross taxa in SNP. ▸ Serves as food resource, hiding refuge and migration corridors linking the lake with the hills. ▸ Rich bird communities are seen in the riparian habitats, and large trees offer nesting resources to raptors. ▸ Large carnivores prefer this habitat too. Carnivores (with many of them classified as vulnerable) and raptors, indicate also the state of the prey they depend on.	▸ Key plant species: *Acacia spp. and* Doulm palms ▸ Large carnivores ▸ Guinea fowl ▸ Raptors	▸ numbers and distribution ▸ Vegetation cover ▸ Bird species composition ▸ Tree species composition ▸ Tree recruitment	▸ tree cover, tree hight ▸ river bank erosion ▸ livestock trampling ▸ raptor nests ▸ Large mammals (spoor surveys, camera traps)
	Crater lakes	▸ The crater lakes are sensitive to changes in water level . ▸ Of different properties, they are important for different conservation targets. ▸ Due to their relatively small size, they are more susceptible to disturbance and environmental change	▸ Nile crocodile ▸ Endemic fish ▸ Water bird colonies	▸ Water quality ▸ Water quantity	▸ Water level ▸ Water quality ▸ Nile crocodile nursery
	Rocky outcrops, cliffs	▸ LTNPs have some unique geological formations, that may result in interesting hiking routes, yet many of these formations are sensitive to disturbance and need to be monitored. ▸ Some may be valuable for paleontological prospecting, other already showing interesting fossils (Petrified forest) are being exposed and eroded. ▸ Cliffs, lava outcrops and other formations are important for some of the characteristic fauna of the area.	▸ Hamilton's tomb bat ▸ Vultures	▸ Flora and fauna composition	▸ Erosion ▸ Raptor nests ▸ Rodent densities ▸ Bat colonies

	Conservation target	Rationale for selection	Important subsidiary targets	Key ecological attributes	Indicators to be monitored
Species	***Large Carnivores***	▸ Highly threatened, yet play an ecologically (and economically from a tourism perspective) essential role in the LTNPs. The African lion and Leopard are classified as vulnerable by the IUCN.	▸ Cheetah ▸ Lion ▸ Hyena(spotted and striped) ▸ Silver backed jackal ▸ Leopard	▸ Population size ▸ Population structure ▸ Habitat size and quality ▸ Prey availability	▸ Population size and structure ▸ Genetic diversity ▸ Habitat size and quality, and connectivity ▸ Prey species availability
	Large Herbivores	▸ Currently threatened by poaching and habitat degradation due to livestock incursions ▸ Several species are threatened	▸ Grevy's zebra ▸ Oryx beisa ▸ Lesser kudu ▸ Common Zebras ▸ Warthog	▸ Population size and structure ▸ Genetic diversity ▸ Habitat size and quality	▸ Population size and structure ▸ Genetic diversity ▸ Habitat size and quality
	Rare and threatened herptiles	▸ It is a flagship species of Lake Turkana National Parks Conservation Area ▸ Lake Turkana has the highest number of crocodiles in Kenya ▸ It is threatened by: ○ general habitat loss (pressure on resources including water, fish, sand and wetlands) ○ direct conflict with people ○ indirect anthropogenic effects (e.g. pollutants, poor water quality and ○ dam-building	▸ Diverse fish species ▸ Terrapin ▸ Hippopotamus	▸ Water quantity and quality ▸ Prey species ▸ Sandy beaches for breeding	▸
	Threatened terrestrial birds	▸ Vultures are classified as threatened by IUCN	▸ Somali Ostrich ▸ Raptors	▸ Population size ▸ Prey availability	▸ Population size
	Archaeological sites	▸ One of the world's greatest treasures where proof of man's origin was found. They are threatened by livestock incursion and there is potential threat from increased visitor numbers.	▸ Fossil finds - crocodile, elephant, tortoise, Petrified Forest. ▸ One of the oldest stone artefacts, pottery and use of controlled fire.	▸ Number of sites ▸ Site integrity	▸ Site status

Threats to conservation targets

The comprehensive definition of conservation targets and their KEAs enables the identification of the "***threats*"** to these targets and attributes, and the subsequent prioritisation of these threats according to their significance. The PAPF defines a threat as any factor, resulting either directly or indirectly from human activities, which has the potential to destroy, degrade or impair a conservation target during the 10-year lifespan of the PA plan. **Table 6** shows the priority threats impacting or likely to impact on the LTNPs conservation targets and their KEAs.

Table 6: Threats to LTNPs conservation targets

Target / Threat	*Lake system*	*Littoral zone*	*Lacustrine grassland*	*Acacia-Commiphora bush-land*	*Riparian Habitats*	*Crater lakes*	*Rocky out-crops and Cliffs*	*Large Carnivores*	*Large Herbivores (Hippo Topi Oryx. Gerenuk Grevy's zebra*	*Rare and threatened herptiles (Nile Crocodile, snakes)*	*Threatened terrestrial birds (Somali Ostrich, Vultures)*	*Archaeo-logical sites*
Climate change	Low	Low	Low	Low	Low	Low		Low	Low	Low	Low	Low
Tourism infrastruc-ture/activities			Low	Low		Low						Low
Oil explora-tion	Low											
Littering	Medium	Low	Low	Low	Low	Low						
Water Pollu-tion	Low	Low							Low	Low		
Damming of rivers	High	High	Low		High	Medium				High		
Water ab-straction for irrigation	High	High	Low		High					High		
Siltation of the lake	Low	Low								Low		
Soil erosion			Low	Low	Low		Low					Medium
River bank erosion					Medium							
Tree cutting				Low	Low							
Livestock incursion		Low	High	Medium	Low			High	High	Low	Low	High
Invasive species	Low	Low	Low	Low								
Illegal fishing	High	Medium								Medium		
Poaching		Medium	Very high	High	High			High	Very high	Medium	Very high	
Human wild-life-conflict								High	High	Medium		

Target / Threat	*Lake system*	*Littoral zone*	*Lacustrine grassland*	*Acacia-Commiphora bushland*	*Riparian Habitats*	*Crater lakes*	*Rocky outcrops and Cliffs*	*Large Carnivores*	*Large Herbivores (Hippo Topi Oryx. Gerenuk Grevy's zebra*	*Rare and threatened herptiles (Nile Crocodile, snakes)*	*Threatened terrestrial birds (Somali Ostrich, Vultures)*	*Archaeological sites*
Poisoning								Low				
Diseases								High	Medium			
Declining prey species								Medium		High		
Inbreeding and cross breeding									High			
Extraordinary predation									Very High			
Illegal collection of artefacts												Medium

Ecological management objectives and actions

The identification and ranking of the threats to the LTNPs conservation targets and their KEAs provides the basis for the development of the Ecological Management Programme's management objectives and actions. Objectives have been developed to address the clusters of threats shown in Table 6. Three objectives have been developed addressing crosscutting threats to the LTNPs most important habitats (covering conservation targets: *Lake system, Littoral zone, Lacustrine grassland, Acacia - Commiphora bushland-grasslands, and Riparian Habitats*); addressing threats to the LTNPs species of concern (covering conservation targets: *Large carnivores*, *and large herbivores*); and addressing the understanding and monitoring of conservation targets and their threats. The three objectives developed for the LTNPs Ecological Management Programme are:

MO 1. Status of important LTNPs habitats improved
MO 2. Conservation status of species of conservation concern enhanced
MO 3. LTNPs ecological dynamics monitored and understood

These management objectives and their subsidiary management actions are described in detail in the following sections. Under each management objective is a brief description of the relevant management issues and opportunities, which provides the specific context and justification for the management actions.

Objective 1: Status of important habitats improved

The wildlife in the LTNPs is dependent on waters from Lake Turkana, particularly during dry seasons when other seasonal sources of water dry up. Both of the Lake Turkana major rivers (Omo and Turkwel) have their headwaters far away from Lake Turkana. The Omo River, which has its source in the Ethiopian highlands, is the only perennial river draining in Lake Turkana. Increasing population, coupled with the intensification of land-use practices in the main catchment areas of these rivers has resulted in increased diversion of water to support agriculture and hydro-power generation in areas upstream of the LTNPs. This has not only resulted in substantial drop in the quantities of water entering Lake Turkana, especially during the critical dry season, but has also impacted negatively on the quality of water in these rivers, primarily through increased siltation. Any further increase in the extraction of water that would otherwise have entered the lake could have serious consequences to the area's ecology and, in particular, its ability to maintain fisheries and wildlife populations dependent on the lake.

Many of the threats to the conservation of the Lake Turkana and its associated wetlands are located well beyond the boundaries of the LTNPs. Despite the fact that addressing these threats are beyond KWS' immediate mandate, if left unattended to, they are likely to have severe and far-reaching impacts on the LTNPs ecology and wildlife populations. Therefore, this objective has therefore been developed to ensure that the quantity and quality of water in key rivers feeding Lake Turkana are maintained. It also ensures that other critical habitats in the area are conserved.

This objective sets out sixmanagement actions designed to ensure the conservation of the river systems and wetlands is enhanced through strengthening collaboration with and supporting the work of those stakeholders in the wider LTNPs landscape. The three management actions are as elaborated in the following sections.

Action 1.1: Protect and monitor the lacustrine grasslands and sandy beaches

In addition to restricting activities in the lacustrine grasslands and sandy beaches by zoning these areas as restricted zones, LTNPs management will identify, map and mark the Nile crocodile breeding areas to facilitate identification by researchers and park management. This will help to ensure that crocodile nesting sites are not disturbed. On the other hand most water birds breed in the lacustrine grasslands. It is therefore important that critical water bird breeding sites are similarly identified, mapped and marked to enhance their protection.

Action 1.2: Promote sustainable water use in Lake Turkana catchment areas

As previously discussed, all of the LTNPs major rivers have their headwaters well beyond the boundary of the LTNPs. Both land use and population pressure have intensified in these areas over the recent years, a trend that is set to continue during the lifespan of this plan. This development has led to increasing demands for water from rivers feeding Lake Turkana. Indeed the increasing extraction of water from these rivers has already contributed to the extended dry period, already observed in some rivers (such as the Turkwel). If this trend continues, the supply of water very crucial to the continued conservation of the area's biodiversity is likely to be significantly impacted over the next 10 years. In order to establish the current and likely future impacts of water extraction on LTNPs water supplies, under this management action a study will either be commissioned or undertaken by KWS researchers. The results of this study will set the stage for the identification of priority areas for LTNPs management to focus activities aimed at enhancing the sustainable use of water supplies. This will initially involve collaborating with the relevant Water Resource Management Authorities (WRMAs) in the installation of river flow gauges on key impacted rivers to enable ongoing monitoring of trends in water quantity. At the same time, LTNPs management will collaborate with the WRMAs in establishing and providing training and support to Water Resource User Associations and in developing watershed management plans.

Action 1.3: Control threats to riparian habitats in SNP

Sibiloi National Park has several seasonal rivers that sustain riparian habitats that host unique biodiversity. These riparian habitats are important wildlife and livestock migration corridors linking Lake Turkana and the hills. They are rich in birdlife as they offer suitable nesting areas for birds. Carnivores also prefer these habitats. However, despite their conservation importance, these riparian habitats are under immense pressure from livestock impacts. Under the park's zoning scheme, these habitats have been zoned as Restricted Zone. Hence, under this management action SNP management will ensure that livestock use of these habitats is controlled through regular patrols as well as awareness creation among local pastoralists on the importance of these habitats.

Action 1.4: Strengthen water quality monitoring systems on major rivers feeding Lake Turkana

Besides the desired quantity of water flowing into Lake Turkana, the quality of water is likely to become an increasingly important issue during the lifespan of this plan. The problem of water quality is likely to increase as commercial and industrial activities in urban centres and rural agricultural practices intensify upstream. On water quality issues, these activities take place well beyond the boundary of the LTNPs. As such, KWS will aim to address this important issue in close collaboration with the relevant authorities. However, as a priority, LTNPs research staff will be equipped with water monitoring equipment to ascertain the extent of the

problem, and to identify local point sources of pollution. LTNPs management will then liaise with NEMA on suitable mitigation or enforcement measures that can be instigated in order to ensure that the quality of water entering Lake Turkana continues to support its ongoing conservation.

Action 1.5: Collaborate and support reforestation programmes in Lake Turkana water catchment areas

One of the most serious consequences of the intensifying land uses and agricultural practices in Lake Turkana's catchment areas is the high levels of deforestation underway. This activity is particularly severe in the catchment area of the Turkwel River. It has so far contributed to an increased seasonality in the river's flow and an increased sediment load the river typically carries, which in turn has contributed to increased siltation of the river itself and Lake Turkana. LTNPs management activities under this action will therefore focus on collaborating and working with KWS Headquarters and the Western Conservation Area Management to ensure effective targeting of any reforestation programmes in Lake Turkana's catchment areas. Such a move will make sure that the maximum conservation benefits are derived from such interventions.

Action 1.6: Protect critical breeding habitats for birds, fish and crocodiles

Critical breeding areas for fish that are adjacent to Sibiloi and Central Island National parks are not legally protected. Similarly a critical water bird breeding area (Kaldera Island) for the South Island National Park birds is not legally protected . These fish and bird breeding sites are under threat from illegal fishing and destruction of bird nests by fishermen. Hence, under this management action, KWS will collaborate with relevant government agencies and the local communities to have the Kaldera Island and at least 2 Km of Lake Turkana waters surrounding Central Island National Park, and 2km of Lake Turkana Waters adjacent to SNP gazetted as protected areas under the Wildlife Conservation and Management Act, 2013. Figure 10 shows location of Kaldera Island.

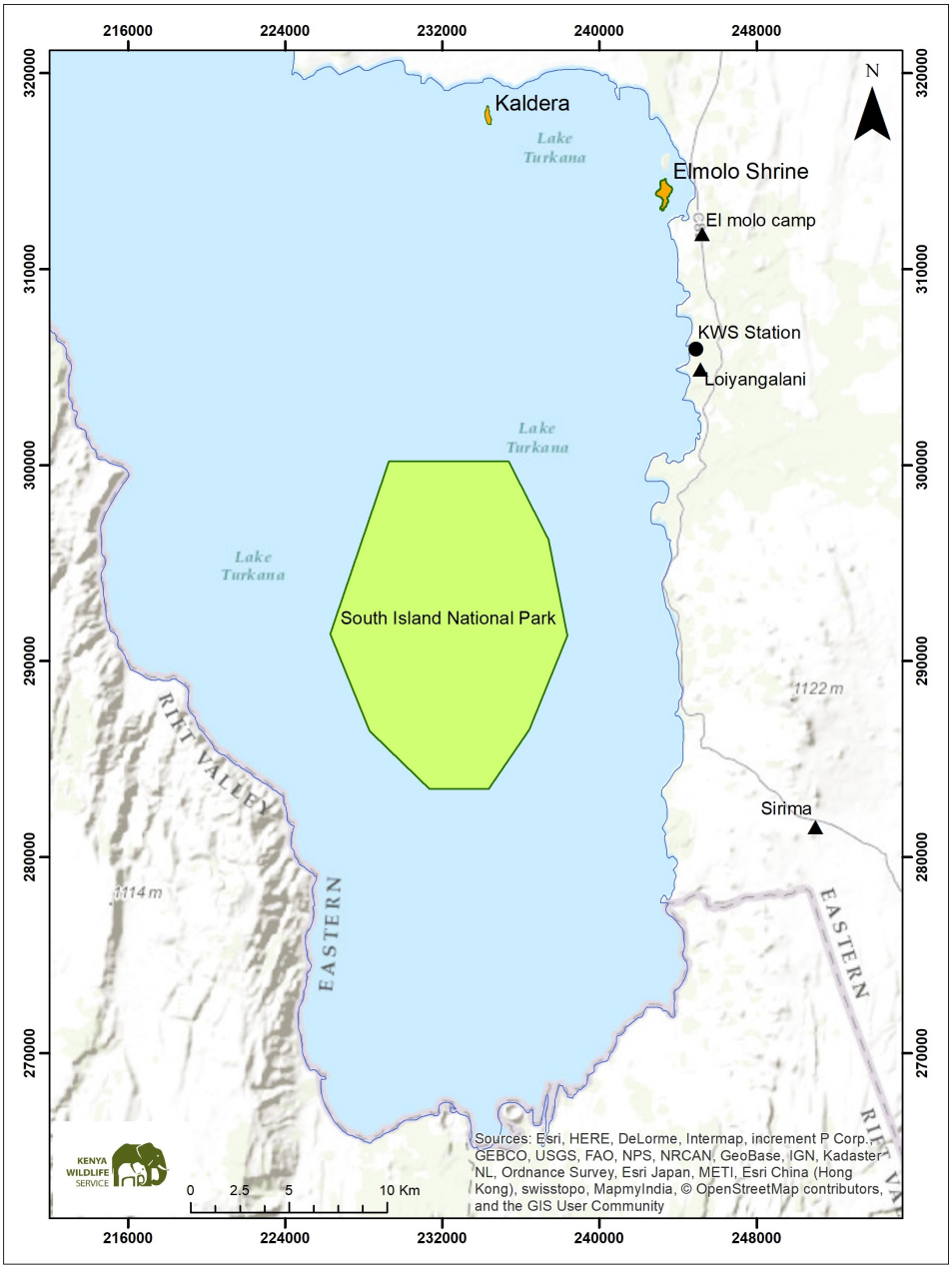

Figure 10: Location of Kaldera Island in relation to South Island National Park

Objective 2: Conservation status of species of conservation concern enhanced

The desired future state of the LTNPs that this objective aims to bring about is one where the species-level conservation targets are effectively managed to ensure their continued survival in the LTNPs. To achieve this, eight management actions focusing on enhancing understanding and conservation of Grevy's Zebra and large carnivores have been designed. These are elaborated in the following sections.

Action 2.1: Monitor Grevy's Zebra population

The establishment of the correct status of Grevy's zebra populations in SNP is critical as the area's population remains fragile and highly susceptible to potential threats such as poaching, disease or intra-specific competition that could easily make the species extinct in the area. As such, the monitoring and surveillance of the zebra population is imperative for informing LTNPs managers on the overall status and trends in these populations. Hence, information on Grevy's Zebra population dynamics, including the numbers, growth rates, reproductive health as well as factors that may be affecting performance (e.g. density of browsers, rainfall, etc) will be regularly collected, collated and disseminated. The collection of this information will involve a number of strategic steps including the deployment of an officer to specifically monitor free-ranging Grevy's Zebra populations. To further enhance monitoring, additional indirect monitoring techniques will also be implemented.

Action 2.2: Establish a Grevy's Zebra site committee for the Sibiloi National Park

Grevy's zebras are widely dispersed beyond the SNP boundaries. This calls for a well, coordinated and landscape-level initiative to consolidate and streamline the conservation of this species across the area. The first step in achieving this approach to Grevy's zebra conservation is the establishment of a site committee, made up of representatives from SNP-adjacent areas where Grevy's zebras are found, in order to guide and oversee conservation activities focusing on this species in the area. This will involve close liaison with the KWS Headquarters Species Conservation and Management Department, and the subsequent development of Terms of Reference (ToR) for the committee. Once developed, potential members will be invited to an initial stakeholder meeting to review the ToR and the key purpose of the committee. KWS will then support the operationalisation of the committee through the provision of ongoing logistical support for its bi-annual progress review meetings.

Action 2.3: Carry out comprehensive census of Grevy's zebra population in and around Sibiloi National Park

Due in part to the extensive dispersal of Grevy's Zebra, accurate data on the size and composition of the Grevy's zebra population in and around the SNP is currently not available. This baseline information on the status and health of the local Grevy's zebra population needs to be established before further steps can be identified and implemented to ensure the continued conservation of the species in the area. As a preliminary step, a ground count of all individuals within SNP and adjacent areas will be undertaken, along with the photography of each individual to enable easy identification in future. Specific studies may also be needed to ascertain the impacts of particular diseases on the population's increase, and potentially, the extent of hybridisation between Grevy's and Burchell's zebra and possible impacts that this may have had on the genetic integrity of the SNP population.

Action 2.4: Investigate feasibility of relocating Grevy's Zebra within a fenced sanctuary in the Sibiloi National Park

The small and widely dispersed Grevy's zebra population faces an assortment of challenges to its viability and integrity. These include potential impacts from extraordinary predation, particularly from lions, disease (most notably anthrax, which has had a large impact on the population of zebras within their natural range) and from genetic dilution from inbreeding with Burchell's zebra. The development of an enclosed sanctuary into which genetically pure

Grevy's zebra could be translocated to form the core of a breeding population, could go a long way in addressing many of these issues. However, the development of such a sanctuary and the proposed movement of animals would be an expensive undertaking. Moreover, the move may have negative ecological impacts on the greater SNP environment or the zebras themselves. As such, a feasibility study on the establishment of a Grevy's zebra sanctuary will be undertaken in combination with the Grevy's Zebra Task Force (including an assessment of the potential locations and environmental impacts). If appropriate, and in line with recommendations from this study, a sanctuary will be established and Grevy's zebra moved into the area. In addition, subsequent liaison with the Grevy's Zebra Task Force about translocation of additional individuals to the sanctuary may be needed in order to boost the sanctuary population or even out any imbalances in the age/sex structure.

Action 2.5: Monitor and restore carnivores

Despite large carnivores being identified as a conservation target for the LTNPs, no management actions are currently considered necessary under this programme to abate the specific threats identified (measures to reduce human-wildlife conflict are included in the Community Partnership and Education Programme). However, as these species are of particular conservation and economic value, enhanced baseline information and monitoring of these species is especially important. This management action will therefore institute targeted monitoring of selected species, comprising lion, cheetah, leopard, spotted hyena and striped hyena, in accordance with the specifications of the LTNPs Ecological Monitoring Framework. The data collected will cover population sizes and distributions, and incidence of disease and human-carnivore conflicts. The action also makes provisions for carrying out a study to quantify impacts and causes of human-hyena conflicts, which are very common in the area. Further, under this management action, efforts will be made to restore the species whose population is deemed non-viable through translocation of suitable numbers to the SNP. All translocated animals will be collared and monitored.

Action 2.6: Monitor Nile Crocodiles and fish populations

Whereas the status of fish in Lake Turkana is fairly known given the published work of KMFRI and its affiliated researchers, the same is not the case with the Nile crocodile. A census carried out in 1988 estimated that a marked declined of crocodiles on Lake Turkana had occurred between 1966-1988 and this was attributed to inexorable expansion of the local human population and climate change the latter causing a 6 meter drop in the lake level. No recent data on the status of the Nile crocodile in the LTNPs is available. Consequently, LTNPs management will endeavour to carry out a census of Nile Crocodiles to understand its population status and trends. Thereafter, scheduled crocodile census will be conducted every 3 years. On the other hand, with increasing damming of Lake Turkana's rivers and upstream irrigation, it is anticipated that there will be detrimental effects on fisheries from flow reductions and widespread use of chemical pesticides on plantations. It is therefore imperative that fish populations are monitored. Towards this, LTNPs will collaborate with KMFRI in line with the KWS/KMFRI Memorandum of Understanding to ensure that fish status in the lake is understood.

Action 2.7: Establish a water fowl monitoring programme

The Lake Turkana is listed as an Important Bird Area, particularly because of its populations of breeding and migrating water birds. This status was mostly based after water bird surveys in the early nineties. However, little is known about the trends and current status of water birds in the area. For these reason, water birds will be monitored in collaboration with NMK to

understand species population trends. An inventory will commence to collect information on species composition, seasonal occurrence, abundance and breeding of birds. Since many species are migratory or move irregularly, and since the condition of wetlands are highly variable, the results of an inventory are important, considered comprehensive after a series of surveys are undertaken over a number of years. Hence, an inventory and assessment shall be conducted for water birds and their habitats. Estimates on population size, distribution, abundance, range occurrence and habitat assessments will also form a basis of monitoring variables. The counts will be a collaborative effort between the National Museums of Kenya, Kenya Wildlife Service and the Kenya Wetlands Working Group.

Action 2.8: Monitor vulture population

Sibiloi National Park and adjacent areas host 6 species of vultures (Table 7) that are listed as threatened by the International Union for Conservation of Nature (IUCN) implying that they are at a very high risk of extinction in the wild.

Table 7: Vultures recorded in SNP and adjacent areas[7]

Scientific name	Common name	Conservation Status(IUCN)
Neophron percnopterus	Egyptian Vulture	EN
Necrosyrtes monachus	Hooded Vulture	CR
Gyps africanus	White-backed Vulture	CR
Gyps rueppellii	Rüppell's Vulture	CR
Trigonoceps occipitalis	White-headed Vulture	CR
Torgos tracheliotus	Lappet-faced Vulture	EN

The reasons for decline in vulture populations remain unclear, although a variety of anthropogenic factors have been implicated in other areas in Kenya. These include poisoning, disturbance, and habitat conversion leading to a reduction in food availability. Understanding the status of vultures will be essential if appropriate management actions are to be implemented.

Hence, SNP management in collaboration with the KWS Research Department and NMK Ornithology Department will initiate a vulture monitoring programme to understand the vulture population trends and dynamics.

Objective 3: LTNPs ecological dynamics monitored and understood

The future desired state of the LTNPs is where the ecological dynamics of the parks and their ecosystems are well understood to support adaptive management of the parks. Currently, few ecological studies have been carried out in the parks and as such the species inventories are incomplete. Consequently, under this management objective, management actions have been designed to improve ecological information on the LTNPs. These actions are elaborated in the following sections.

[7] University of Helsinki Research team / Contact: Mar Cabeza mar.cabeza@helsinki.fi

Action 3.1: Design and implement an ecological monitoring programme

Ecological monitoring of the LTNPs forms a very crucial component of this Ecological Management Programme. Monitoring is vital for understanding the nature of, and trends in, ecological change in progress in the LTNPs, the factors responsible for this change, especially human influences, and, ultimately, for understanding the overall health of the LTNPs.

The first step in developing the EMP will be to refine and finalise detailed monitoring protocols, that is, the monitoring indicators, their information sources and methods to be used in collecting information. The detailed elaboration of monitoring protocols will in turn determine human resource, equipment and any other requirements for undertaking the protocols. These necessities will likewise be included in the detailed EMP document. The establishment of monitoring protocols will also pave the way for the collection of baseline data for specific indicators and filling in any gaps where such baseline information does not exist.

Action 3.2: Establish an ecological monitoring database

Several of the management actions listed in this programme, and as a result of the implementation of the LTNPs Ecological Monitoring Plan, will generate a significant amount of ecological information. Likewise, a considerable amount of data is collected, or can be collected, by field staff members in other departments, including the Community Wildlife Service, rangers and the tourism officers and researchers. If this information is to be used effectively, it needs to be managed, stored and synthesised effectively and efficiently. Essentially, the outputs must be disseminated to all relevant LTNPs and KWS officers in a form that is easy to digest and understand. Unless this is achieved, much of the ecological information is likely to be unused or unusable, wasting both time and resources of the officers collecting and analysing the data.

This action, therefore, provides for the establishment of LTNPs ecological monitoring database designed to store information generated through the implementation of this programme and the LTNPs Ecological Monitoring Plan. The database will be developed to be as far as possible compatible with other LTNPs databases so that data can be easily transferred between them. The design of the new database will be complemented by the development of a reporting framework and communication protocols aimed at ensuring that database outputs are regularly available in a simple and transparent form for both researchers and other park managers.

Action 3.3: Establish a wildlife research centre

Research and monitoring is crucial for an area the size and complexity of the LTNPs. However, as threats to the LTNPs ecological integrity continue to rise, it is now imperative that ecological information is readily available to support management decision-making and enable timely response to impending threats.

The ability of the LTNPs to undertake a more proactive management approach and to assume a lead role in implementing many of the management actions set out in this programme is currently severely undermined by a variety of factors. The first deficiency that needs to be urgently addressed is the current human resource shortfalls in the LTNPs research section. In this regard, LTNPs management will liaise with KWS Headquarters to deploy scientists to the LTNPs. It will then be necessary to address the lack of research infrastructure, through construction of a research centre at Alia Bay. The development of this research centre will be complemented by the provision of research equipment and communica-

tion resources required to meet specified ecological research needs. This research center will also host the biodiversity database for the LTNPs.

Action 3.4: Conduct wildlife censuses in Sibiloi National Park

Repeated wildlife censuses are necessary in the effective management of protected areas. The purpose of such census is to measure the response of wildlife populations to changes, deliberate or accidental, in their natural environment. Repeated censuses show the increase or decrease in population and the population structure. If carried out at different seasons, they give information on seasonal movements, mortality and use of different types of vegetation. In view of this, an initial wildlife census will be conducted to establish a baseline and thereafter wildlife censuses will be designed and carried out regularly to monitor wildlife population trends. As well as wildlife censuses, a cross-section of animals will be collared for management to learn more about dry season and wet season grazing areas in an effort to alleviate conflict between humans and wildlife species of concern. Towards this, two common zebras, four Grevy's zebras and two oryxes will be collared and their movement closely monitored.

Action 3.5: Collaborate with other researchers undertaking wildlife research in the area

LTNPs lack enough staff or resources to adequately address the large number of ecological issues that need to be better understood. However, it is fortunate enough to have had a number of independent research projects, which have made substantial contributions to the existing knowledge of the area's ecology. The potential contribution of external researchers to the LTNPs conservation still remains high, although some research programmes have in the past been driven by external rather than LTNPs and KWS priorities. Some researchers have not conformed to national KWS research guidelines, particularly the communication protocols regarding the identification, review, approval and supervision of research activities. As a first step towards rectifying this hitch, and ensuring that the management and targeting of KWS and external LTNPs research activities is improved, LTNPs management in collaboration with the KWS Biodiversity Research & Monitoring Division will ensure that the KWS research guidelines are disseminated and enforced within the LTNPs.

Additionally, to ensure the better targeting of future research in the area, a research prospectus promoting priority LTNPs research needs will be developed. It will subsequently be disseminated to appropriate potential research institutions and ecologists that may wish to collaborate with KWS in undertaking specialist studies.

A preliminary list of studies that have already been identified for possible inclusion in this prospectus is shown in the box below:

A preliminary identification of specialist studies needed in the LTNPs:

- The impacts of public infrastructure in the LTNPs on the areas ecology
- The impacts of livestock incursions on the LTNPs ecology
- The extent and impacts of tree-cutting in LTNPs
- Potential solutions to human-wildlife conflicts around the LTNPs (in particular carnivores)
- The extent and impacts of bush meat and trophy poaching in and around the LTNPs
- Population dynamics of species of special concern e.g. Grevy's Zebra, Nile Crocodile
- Habitat requirements and population dynamics of Beisa Oryx
- Biodiversity assessments of Central Island and South Island National Parks

Action 3.6: Collaborate with other institutions in conserving LTNPs

In order to succeed in conserving LTNPs, collaboration in terms of carrying out research and disseminating research findings must be encouraged among organisations working around the conservation area. This will ensure information flow among the relevant government officers and promote science-driven decision-making. In this regard, management will liaise with KWS legal department to ensure that MOUs drawn with other institutions (KMFRI and NMK) are implemented at the field level. In addition, an MOU will be drawn between KWS and Turkana Basin Institute (TBI) to ensure that issues of mutual benefit are addressed.

Action 3.7: Design and implement a climate change mitigation and adaptation programme

Climate change mitigation measures are actions that seek to limit the magnitude and/or rate of long-term climate change. Climate change mitigation generally involves reductions in human emissions of greenhouse gases. Mitigation may also be achieved by increasing the capacity of carbon sinks, e.g., through reforestation. LTNPs protected areas have adopted low-carbon energy sources to mitigate climate change impacts. The main energy source for office operations and residential use at Sibiloi and Central Island National Parks, for instance, is solar energy. Diesel generators are only used when the solar power system fails. Under this management action, LTNPs management will partner with schools at Illeret, Gus, Moite, Loiyangalani and Kalakol to plant trees as a climate chang
e mitigation measure.

SNP has a critical location in terms of climate change biodiversity adaptation. Being the Northernmost Park in Kenya, and currently representing an important ecotone, where flora and fauna communities are in transition, the park will increasingly become an important refuge or a stepping stone as a result of species range shifts due to climate change. Hence, under this action wildlife species and their habitats will be monitored. In addition, climate monitoring will be initiated in the park.

Prehistoric and Cultural Heritage Management Programme

Programme Purpose and Strategy

The purpose of the Prehistoric and Cultural Heritage Management Programme is:

> To promote participatory conservation and sustainable use of prehistoric and cultural heritage resources in, and around Lake Turkana through documentation, research and dissemination

Over the last four decades, researchers working in and around Sibiloi National Park have produced a great deal of wealth in paleontological, geological and archaeological data. The research has revealed a complex history of volcanism, tectonics and sedimentary cycles preserving fluvial and lake phases of the area.

More than 50,000 fossil specimens have been collected from the Turkana Basin, almost 20,000 from SNP and the adjacent areas alone. This includes an impressive 350 hominid specimens from the basin which have contributed considerably to our present understanding of the diversity of human biological, behavioural and cultural through time and space.

Hominid behaviour, including technological advancement as evidenced in tool use, has been interpreted from the archaeological remains. The huge collection of mammalian and reptilian fossils such as the fossil elephant, tortoise and crocodile also provides an opportunity to trace the progression of numerous faunal lineages through time.

The huge potential of the Lake Turkana National Parks region, in terms of new fossil discoveries, lies in the fact that some 1,200 square kilometres of fossil exposures remain utterly under-explored. Much of this includes unexplored areas, and areas previously explored, which have undergone substantial erosion over the years, yielding freshly exposed fossils. All these have huge potential to turn out new finds, which will significantly contribute to furthering of our understanding of palaeo-environments and the context under which our own genus, Homo, evolved.

The following section sets out the guiding principles that describe the key factors taken into account in the development of the Prehistoric and Cultural Heritage Management Programme. This will ultimately influence the way the programme is implemented in achieving the programme purpose.

Guiding principles

The guiding principles for the Prehistoric and Cultural Heritage Management Programme are:

- **Collecting, documenting and promoting cultural heritage**
- **Protecting and understanding natural and cultural heritage**
- **Promoting research collaboration and disseminating information on cultural and natural resources**

These guiding principles are briefly described and explained in the following sections.

Collecting, documenting, promoting natural and cultural heritage

The National Museums and Heritage Act, 2006 provides the legal and institutional foundation for the management of heritage resources in Kenya. The primary mandate of NMK, as entrenched in the Act, is to serve as a national repository for items of scientific, cultural, technological and human interest; to serve as places where research and dissemination of knowledge in all fields of scientific, cultural, technological and human interest may be undertaken; to identify, protect, conserve, and transmit the cultural and natural heritage of Kenya; and promote cultural resources in the context of social and economic development.

Further, according to the NMK Strategic Plan, the NMK's mission is to promote conservation and sustainable utilization of national heritage through generation, documentation and dissemination of research and collection and management of knowledge, information and innovation. Among the key activities that will be implemented through the strategic plan are to "identify, protect, conserve and transmit the cultural and natural heritage of Kenya and promote cultural resources in the context of social and economic development".

As such, under the Prehistoric and Cultural Heritage Management Programme, NMK will strive to ensure that heritage at the LTNPs is collected, documented and promoted for the benefit of present and future generations

Protecting and understanding cultural heritage

Although the dissemination of management information is a crucial function of the LTNPs, the reactive provision of information is unlikely to be sufficient to ensure an adequate management response to deal with the growing and increasingly complex pressures impacting the cultural and natural heritage.

A principle of the prehistoric and cultural heritage programme is therefore protecting cultural heritage and thereby maintaining its authenticity. As such, NMK will take a stronger and more proactive leadership role in addressing the key factors influencing the integrity of both the natural and cultural heritage in and around LTNPs, including anthropogenic pressures such as infrastructure development, tourist picking materials, visitor impacts, livestock incursion into the protected area and natural factors such as soil erosion and land degradation, localized tectonic activity and land-use changes impacting on the general materials on the surface.

A particular area where the prehistoric and cultural heritage management programme will need to provide leadership is in the understanding and maintenance of an appropriate balance between the need to preserve and conserve important prehistoric and cultural assets in the SNP on one hand, and the need to permit rational and appropriate development of the protected area on the other. A guiding principle for the prehistoric and cultural heritage management programme will therefore be to both understand the delicate balance between conservation and development in the area, as well as to design and implement management actions to maintain this balance.

Promoting research collaboration and disseminating information on cultural resources

The NMK has over the past years engaged in research, education and other activities that have weighty socio-cultural and economic implications thus contributing to the development of various communities in the country. NMK is a well-placed research institution not only in Kenya, but also internationally, with the desired physical and human capacity to undertake high quality research. The hard work expended to stimulate public and private partnership in carrying out research makes NMK a versatile network, capable of dealing with the cultural and heritage diversity. NMK undertakes research based on cultural and natural history in a number of fields as well as research in biomedical and bio-conservation in collaboration with other research institutions.

In view of the fact that research carried out in the LTNPs potentially comprises anthropological, geological, paleontological, archaeological and ecological disciplines, it is imperative that the core team is led by, or composed of NMK and KWS staff. Under this management programme, NMK will seek research collaboration with other stakeholders to maintain a robust research presence in the LTNPs.

Management objectives and Actions

Objective 1: Conservation of cultural heritage resources enhanced

The desired future state of the LTNPs that this objective aims to bring about is one where the prehistoric and cultural heritage conservation targets are effectively managed to ensure their continued availability in LTNPs. Cultural resources, and especially prehistoric sites, face several threats that could seriously degrade these sites if corrective measures are not implemented in time. Livestock intrusion in Sibiloi National Park usually tramples exposed surface fossils found in most parts of the park. Some visitors are also known to illegally collect and carry the fossils and stone artefacts as souvenirs. Besides, lack of awareness on the value of these resources amongst visitors and the local community could be contributing to the degradation of this critical resource. Hence, under this management objective, six management actions have been designed, which, if successfully implemented, will ensure that cultural heritage resources of SNP are protected and conserved. The actions are elaborated in the following sections:

Action 1.1: Create awareness among local communities on the importance of cultural heritage sites

Increasing population and development are leading to the destruction of heritage resources not only in Kenya, but globally. The preservation of these precious resources importantly relies on the community understanding and appreciation that this is a valuable cultural asset that belongs to them.

Therefore, a sound policy on community engagement in heritage management is of critical importance for the preservation and conservation of the cultural and natural heritage in LTNPs. The involvement of communities in such activities boosts awareness of, and injects pride, in their natural and cultural heritage. It also enables the community to be hands-on in promoting what they see as unique in terms of developing an appropriate livelihood strategy, especially when they share the socio-economic benefits accruing from these heritage resources.

At this time, communities living around the LTNPs may not even be aware of the existence and value of these cultural resources in terms of research and tourism. Consistent with the provision of The National Culture and Heritage Policy 2009 that places culture and heritage at the centre stage of development, NMK will work closely with communities living around LTNPs to ensure long-term preservation of pre-historic sites. Towards this important goal, NMK and Turkana Basin Institute (TBI) will organize cultural talks in the local trading centers and schools, and use opportunities presented by public meetings organized by other stakeholders, to create awareness among the local communities.

Action 1.2: Provide alternative sources of livelihood for the local community

There is a pressing need to embrace other stakeholders in developing alternative sources of livelihood that the community can benefit from. Actors and stakeholders to be included, broadly defined, will be heritage agencies such as county government of Marsabit, KWS, TBI, tourists visiting the site, tour operators, other established grass root agencies involved in development of intervention programs in the area, local leaders and the general citizenry. These “actors” would benefit from the identification of a list of broad areas where they can intervene to stimulate support for preservation of cultural resources.

Hence, NMK will work with the community to identify potential areas for intervention and disseminate this information to stakeholders. In addition, NMK will help community in unveiling heritage-branded merchandise and a facility to sell their merchandize to tourists to further augment appreciation of cultural resources. Community members will also be trained in entrepreneurial skills to enable them to exploit fully the existing tourism industry.

Actions 1.3: Support establishment of a viable grazing management system

The engagement of the local pastoralist community in conserving cultural resources at LTNPs is critical. This is because major threats to the cultural heritage resources emanate from direct or indirect activities of the local community. Local pastoralists graze their livestock in Sibiloi National Park and water it at the shores of Lake Turkana. The perpetual presence of the livestock in the park, as aforementioned, is the single most critical threat to preservation of cultural heritage resources in the area. As such, NMK will support KWS and other stakeholders in their efforts of controlling livestock incursion in the park by backing stakeholders’ meetings called to address the livestock incursion problem.

Importantly, NMK officers will also actively participate in grazing committees that have been established to oversee the community grazing management system outside the park. It will also assist in building the capacity of these committees to ensure that they are using traditional systems effectively to manage livestock grazing.

Action 1.4: Maintain and secure major prehistoric sites

There are several prehistoric sites in Sibiloi National Park where specimen fossils are preserved in situ. They include the elephant, crocodile, tortoise sites, and petrified forest. The fossils are secured in iron sheet-roofed wire mesh shelters that are usually closed. Access is only with authority from the Koobi Fora-based NMK officer. However, some destruction has been noted in the past in some sites, with wire mesh being cut in some instances. To address this problem, NMK will liaise with KWS to have patrols intensified around prehistoric sites. To further inhibit a recurrence of these damages, the shelters will be maintained to ensure that the status of the fossils is not compromised.

Action 1.5: Install and maintain interpretive signage

Interpretive signage is a crucial tool for interpreting and managing heritage places. It is normally used to convey interpretive themes and messages to visitors. It is also utilized to keep them far away from vulnerable and fragile features, such as fossils. Under this management action, therefore, interpretive signage will be installed at fossil sites and at major road junctions to enhance understanding and protection of the prehistoric resources. The information to be displayed at the various sites will be developed from the rich published research of the area. This information will then be submitted to an exhibit designer who will determine how it will be presented on interpretive panels.

Objective 2: Cultural resource management capacity strengthened

The future desired state of LTNPs is one where the capacity of cultural resource management is enhanced to incorporate all stakeholders including the community. Therefore, in order to achieve this, the LTNPs management will develop clearly outlined guidelines on infrastructure development and maintenance for the preservation of prehistoric resources. It will also seek to strengthen community participation in the conservation of cultural resources. The rehabilitation and maintenance of facilities at Koobi Fora, along with the construction of a museum gallery and teaching laboratory are also key actions to be implemented. Additionally, under this objective, the management will provide adequate transport for the staff as well as the visitors. These actions are expanded in the following sections.

Action 2.1: Develop guidelines on infrastructure development and maintenance to preserve prehistoric resources

Infrastructure development and maintenance in Sibiloi National Park has the potential to severely degrade yet to be discovered fossils. Although the plan does not envisage any major infrastructure overhaul in terms of roads in the near future, it is expected that tourism support infrastructure such as accommodation facilities and walking trails will be established during the lifespan of the plan. It is therefore essential that LTNPs-specific guidelines for infrastructure development are prepared to be followed by developers to minimise impacts on fossils. Hence, NMK will prepare these guidelines and disseminate them to KWS for adoption and implementation. It will also liaise with the KWS Warden at Sibiloi National Park to ensure that the guidelines are strictly adhered to.

The current park road network is adequate for the current level of tourism and park administration. However, in some instances security and research officers, due to the nature of their work, may need to travel to the more remote areas where there are no roads. To minimise undesirable impacts on the environment, vehicles on security or research missions will be allowed to drive up sand rivers where there is no chance of fossil exposures getting damaged. Should new fossil sites be discovered and roads required to be opened up, the NMK research team will advise KWS on the road alignment.

Action 2.2: Strengthen community participation in conservation of cultural resources

For the long-term sustainability and the continued feasibility of the SNP, it is imperative that the protected area and the communities around it become the focal point of all pre-history research within the area. Therefore, long-term steps will be taken to create infrastructure that will allow all findings to remain in situ, within community land where they are discovered, as part of area heritage, though still under the mandate of NMK and the management of KWS.

Action 2.3: Rehabilitate and maintain facilities at Koobi Fora

The Koobi Fora research camp offers accommodation, laboratories including a comprehensive Geographical Information Systems (GIS) facility. It also offers ready access to information and long-term safe storage for all paleontological and archaeological collections facilitating both lab and field based studies. To ensure that the camp continues to attract more researchers, NMK has renovated the accommodation bandas at the camp. Plans, too, are under-way to rehabilitate and supply water to bandas at the Koobi Fora Museum as well as the staff mess area and staff accommodation bandas. Once rehabilitated, these facilities will be maintained in a habitable condition.

Action 2.4: Refurbish the museum gallery and teaching lab at Koobi Fora

There is need to renovate the museum to offer visitors long-term, extraordinary experiences and inspire repeat visits. In so doing, this would increase revenue generation. With this in consideration, NMK will renovate the site museum and teaching lab with new, appealing images and specimens to reflect the current research taking place in the area. Additional ethnographic materials from the local community will be added to bear witness to the antiquity of Kenya's rich cultural expression.

Action 2.5: Provide adequate transport

For effective management of natural and cultural resources, sufficient and reliable transport is a key requisite. Vehicles are needed for administrative work and staff transport to trading centres to purchase provisions. Currently, Koobi Fora has a vehicle and a large patrol boat. Unfortunately the vehicle is old and breaks down often. Hence, to improve transport requirements, a more reliable vehicle will be provided. The boat will be serviced regularly to meet the necessary safety standards and a qualified coxswain hired to operate the boat. Two mechanics that are proficient in vehicle, plant and outboard engine maintenance will also be deployed at Koobi Fora.

Objective 3: Prehistoric and cultural related research promoted

The great potential of the LTNPs region, in terms of new fossil discoveries, lies in the fact that some 1,200 square kilometres of fossil exposures remain to be explored. Much of this includes unexplored areas; and areas previously explored but have undergone significant erosion over the years, yielding freshly-exposed fossils. All have huge potential to turn out new finds, which will contribute greatly to furthering understanding of palaeoenvironments. In summary, the over 40 years of work at Koobi Fora has provided detailed understanding of mammalian, reptilian and hominid evolution of the last four million years. Geological and fossil resources and the exceptional size of the fossiliferous exposures combine to provide potential for future research unavailable at any other site. Not to realize this potential by continuing the research at Koobi Fora would be to miss a distinctive opportunity that is unlikely, in the near future, to become available again. Consequently under this objective, NMK will promote research to further enrich the research work that has been carried out in the area. This will be achieved through implementation of the following management actions.

Action 3.1: Establish a research database at Koobi Fora

This action is already a work-in-progress. It has so far seen NMK implement a policy whereby all research groups working around Koobi Fora collect data in accordance with harmonized national standards that may be prescribed under the different legislations, namely the National Museums Heritage Act 2006 and the Wildlife Conservation and Management Act, 2013. NMK is also in the process of developing a functional and sustainable resource centre to support research in LTNPs.

Action 3.2: Promote community participation in research activities

Despite many years of sustained research in Koobi Fora, there is still little participation by the local communities residing in this area. Pioneering researchers in Turkana Basin pay glowing tribute to the overwhelming support they received from the communities when they started their research projects in the area. However, despite all the support they have accorded different research projects, the local people continue to be engaged only as subsidiary staff and peripheral onlookers. To compound the matter further, when projects windup, either due to lack of research funding or changing research interests, the local people are often left in the cold, not knowing the exact outcome of these projects.

In recent times this development has resulted in bitter resentments and suspicion among the local people towards researchers. Some research projects have even been “frustrated” by the communities, who end up making unreasonable demands on research projects based on mistaken belief on the outcome of the projects. Certainly, this sad state of affairs has arisen due to lack of coordinated efforts by the scientists in making the host communities active partners in their research endeavours. Such a move would create a sense of ownership and encourage local learners to take up the many branches of Palaeo-sciences as a career.

Despite the enormous contribution to knowledge on human origins that has come from the LTNPs, no single member of the community resident in the area has undertaken or is currently undertaking formal training in the many sub-fields of palaeo-sciences. As a matter of fact, NMK recognizes that local community participation is a key ingredient for the success of any heritage research and management project – especially when they share in socio-economic benefits accruing from such endeavours. However, efforts of having local commu-

nity members trained in palaeo-science is hampered by low levels of education among community members. While locals have participated in archeological research, advances in this career and becoming independent researchers would require formal education. Hence, under this action, NMK will raise awareness among the local community on opportunities offered by palaeo-science and lobby government and non government agencies to support those interested in pursuing palaeo-science through offering bursaries and scholarships. NMK will also begin to actively engage the local communities to ensure that they are active participants by sharing their research findings and also by supporting training of community members in palaeo-science.

Action 3.3: Publish and disseminate research findings targeting local communities

A successful plan that incorporates input from communities and stakeholders is invaluable. In Kenya, various efforts have been made to protect prehistoric sites by supporting the creation of protection laws and conducting research to support heritage management and conservation. Involvement of communities encourages an awareness of, and pride in, their natural and cultural heritage and enables the community to be proactive in promoting what they see as unique in terms of developing an appropriate livelihood strategy. Research will continue to actively involve the community on the findings of their research projects. Publicity and research from current and recently concluded projects will be shared with the community through different media such as posters, booklets, videos and flyers. These tools will be developed in English and Swahili and will be used to enhance awareness creation. Public awareness materials will be distributed in schools, mosques, village meetings and during the information campaigns to be carried out by the researchers.

Tourism Development & Management Programme

Programme Purpose and Strategy

The purpose of the Tourism Development and Management Programme is:

> To develop low impact, high quality tourism that capitalises on the LTNPs distinctive values and imparts memorable experiences to visitors

Significant areas of fossil exposure are contained within the Sibiloi National Park boundaries, preserving an exceptional record of the geology, archaeology and palaeontology from over four million years ago. In addition, the park hosts diverse wildlife species of tourism interest such as large carnivores and large herbivores. Further, the Other two parks, Central Island and South Island National parks, are endowed with breathtaking sceneries. These unique qualities of the LTNPs makes the parks attractive to discerning and adventurous visitors who are seeking solitude as there are vast areas of wilderness on offer.

Aspects of many, if not all visitor activities undertaken, have the potential to adversely affect the environment. This means the management of visitor use is essential to protect the natural features and values of the parks. The intensity, distribution and timing of visitor use should therefore be managed to minimise any environmental and social impact.

Guiding principles

The guiding principles describe key factors taken into account in the development of the Tourism Development and Management Programme and that influence the way the programme is implemented in achieving the above programme purpose. The guiding principles are:

- **Developing the tourism product to appeal to different market segments by providing a variety of distinctive visitor experiences that capitalise on the area's diverse tourist attractions**
- **Promoting environmentally sensitive tourism investment to generate sufficient revenue to support resource conservation efforts**
- **Promoting and marketing LTNPs as a unique destination based on its archaeological, geo-morphological as well as biodiversity resources**

These guiding principles are elaborated in the following sections:

Developing the tourism product to appeal to different market segments by providing a variety of distinctive visitor experiences that capitalizes on the area's diverse of tourist attractions

Though LTNPs are faced by various challenges which require the intervention of the national government and that require a long-term approach to solve, they have a great potential that can be exploited to boost the visitor numbers as the current visitation is far below their potential.

The Kenya Vision 2030 blueprint identifies several tourism related strategies applicable to protected areas that will be pursued to realize the vision. These are:

- *Achieving higher tourism revenue by increasing the country's premium parks and improving the facilities in all underutilized parks; and*
- *Creating new high value niche products (e.g. cultural, eco sports and water-based tourism)*

The Tourism Policy further recommends tourism product diversification to new areas away from the most-visited and, at times, crowded destinations to include less visited sites such as the LTNPs. Therefore, under this management programme, KWS will strive to develop tourism products targeting different market segments and capitalizing on the unique resource values in the LTNPs.

Promoting environmentally-sensitive tourism investments to generate sufficient revenue to support resource conservation efforts

LTNPs are is located in a very sensitive and fragile ecosystems that, if disturbed, require a very long time to regenerate. This is as a result of the climatic conditions in which it is located. Development of tourism products, therefore, will be done in such a way that minimal environmental degradation will occur. As such, LTNPs management will liaise with NEMA office in Marsabit to ensure that all proposed investments are developed in line with the National EIA guidelines.

Promoting and marketing LTNPs as a unique destination based on its archaeological, geo-morphological as well as biodiversity resources

LTNPS and specifically, Sibiloi National Park represent unique geo-morphological features with fossil deposits on sedimentary formations as well as over 100 identified archaeological and paleontological sites. It is steeped in prehistoric assets and is largely regarded by many paleoanthropologists as the cradle of humankind due to the abundance of fossil evidence relating to human, behavioural, biological and cultural evolution.

The KWS Strategic Plan 2012-2017 seeks to enhance financial sustainability through identifying and strengthening revenue streams. The National Tourism Policy also promotes identification and development of culture-related tourism products such as monuments, historical sites and museums, among others, to attract tourists to the country. Furthermore, one of the flagship projects of Vision 2030 is the better marketing of little-visited parks such as LTNPs ones to bring more tourists to protected areas. As such, in line with the aforementioned policies and plans, LTNPs management will endeavour to market the LTNPs to increase visitation. Marketing and product development in the LTNPs will capitalize on its unique elements that are expected to attract a clientele with a unique interest.

Management Objectives and Actions

Objective 1: Tourism products diversified to support different market segments

The LTNPs present a unique wilderness experience and scenery missing in other conservation areas. This has attracted different patterns of visitor use, ranging from very intensive use at the archaeological sites and along the lakeshore to practically non-existent use in the remote and less accessible parts of the protected areas. Despite the uniqueness, visitation and revenue remain low, thus the need for diversifying tourism products.

Environmentally, diversification of the LTNPs tourism product and an increased emphasis on high value, low volume tourism in the wilderness and low use areas also ensures sustainability. While maintaining or enhancing revenues, this will enable KWS to reduce the negative environmental impacts brought about by mass tourism by dispersing use to other areas, and focussing more on value rather than volume. Though under-exploited, the following products are on offer in the LTNPs: Game viewing, bird watching, sport fishing, camping, scenery viewing, visits to archaeological sites, educational tours and research tourism. To diversify tourism products, LTNPs management will strive to improve nature and walking trails and develop new ones, establish sport fishing and boat safaris, provide tour guiding services and initiate night game drives among other activities as will be identified by investors.

These actions are elaborated in the following sections:

Action.1.1: Improve water-based recreational activities

Currently the LTNPs have attracted visitors interested in enjoying water-based activities but due to lack of this product the visitors have ended up seeking alternative locations. There are community boats based at Kalokol, Loiyangalani and Eliye Springs resort at the western shore of Lake Turkana. Majority of these are owned by fishermen and are meant for fishing. In most cases these are normally unreliable and wherever available, the focus has been on taking tourists to the Island National Parks and not recreational activities. The capacity of the boats in use tends to be too low. Hence, under this action, a variety of boats either offered by tour firms or park management for hire, will be availed at all the three LTNPs (Central Island, South Island and Sibiloi National Parks) headquarters. In this regard, KWS will procure boats specifically to offer boat excursions in Lake Turkana.

Action 1.2: Develop observation points and hides

There are currently very few established observation points or bird hides in LTNPs. Observation points offer visitors vantage points to enjoy park sceneries while bird hides allows vitiors to watch birds at close range. Even though currently available to an extent in Sibiloi and Central Island National Parks, proper observation points should be installed with raised platforms and fenced areas where visitors can walk and enjoy the beautiful sceneries and panoramic landscape. As such, a shelter will be constructed at Central Island at the currently used observation point to provide an excellent view of the crater lakes. In Sibiloi NP, the Crocodile

Corner at Alia Bay and Campi Turkana offer excellent views of the Park and the lake. Observation points and bird hides will be constructed at these sites to enhance visitor experience. In addition, suitable observation points will be identified among the many hills in South Island National Park.

However, due to changing and fluctuating lake levels, bird hides will be simple, temporal structures that can easily be adapted to changing lake levels.

Action1.3: Introduce night game drives, night walks and camel safaris

The SNP is fortunate to have a variety of wildlife like hyenas, lions and leopards which are normally seen at night and as such as can attract a significant number of visitors. Hence, night game drives will be introduced on pilot basis in the low use zone and if this succeeds, this activity will be extended to other areas. In addition, controlled ranger guided night walks will be introduced at Koobi Fora and Alia Bay. Further, Camel safaris will also be introduced as part of enhancing visitor experiences.

Action1.4: Improve the existing nature and walking trails and develop new ones

LTNPs visitor experience can be boosted by developing nature trails and short walks. These trails provide visitors with an opportunity to get out of their vehicles, thereby broadening their experience and at the same time reducing vehicle-related environmental impacts. Under this action, new trails will be developed at some existing and already popular tourist attractions such as the Petrified Forest area and along around the Crocodile Corner in Sibiloi National Park. The Petrified Forest is an area of great interest to visitors, but fragile; hence in addition to improvement of the trail to this site, efforts will be made to secure the site. In addition, the nature trails in Central Island National Park will be improved and interpretation signage installed along the current walking trails. Trails will also be constructed in South Island National Park which currently does not have any. Further, to integrate the community in the parks and to share benefits, community guides will be encouraged to give guided tours to visitors at specific trails, as in other Kenyan National Parks.

Action 1.5: Establish sport fishing

Sport fishing is another visitor's catchy product which will attract high-end visitors and influence tourists' experience. Though this is currently not practiced in Central Island and Sibiloi national parks, it is a product worth exploring. In South Island National Park, for instance, sport fishing is being offered but it requires aggressive marketing. To fully exploit the sport fishing potential offered by conservation areas, the LTNPs will be marketed as one of the ideal sport fishing destinations.

To further market this product, a sport fishing code will be developed to guide tourists while on sport fishing excursions to avoid interference with other aquatic animals like sea turtle, hippopotamus and the Nile crocodile. Close monitoring by the security team would also be done to avoid disturbance and other possible illegal incidences.

Action 1.6: Establish boat safari route

A tourist boating safari route will be established from Alia Bay to Koobi Fora. Tourists will fly to Alia Bay and stay at Campi ya Turkana where they could fish. They would then transit from the south end of the SNP by boat, camping on the way and walking as far as the museum bandas at Koobi Fora where they will be guided to sample historical sites and field exhibits in the area. From here, the group would travel north, either walking, by boat or driving to Kokai, from where they would leave. From Campi ya Turkana, Central Island can be visited. A cultural visit could also be made to the Gabbra people at Jerigole or Karsa, while the Dasanach could be visited at Illeret from Kokai. This could be made to last five days and would encompass cultural, prehistory, and a diverse selection of wildlife and birds specific to this protected area.

Action 1.7: Provide tour guiding services

Although extensive, the LTNPs, especially the Sibiloi National Park which is the fourth largest park in Kenya after Tsavo East, Tsavo West and Kora, does not have the high densities of easily visible wildlife associated with other popular protected areas. However, it hosts diverse habitats, including aquatic and terrestrial, that host wildlife species characteristic of northern Kenya. There is therefore need to have specialized guides with the required knowledge and experience in prehistoric heritage and biodiversity to direct the tourists to these attractions enhancing visitor experience and satisfaction. As such, KWS will collaborate with members of the local communities at Illeret, Karsa, Loiyangalani and Kalokol in establishing functional community tour guiding services. Members of the local community who are interested in tour guiding will be identified and subsequently trained in tour guiding. The trained tour guides will thereafter work closely with park management as they offer guiding services.

Objective 2: Tourism facilities developed and maintained

At present the majority of tourists who visit the LTNPs do so primarily for scenery viewing and prehistoric sites. However, this is just a fraction of the experience that can be offered. The current situation in the area is such that tourist accommodation facilities are few. Accommodation is restricted to a KWS guesthouse at Alia Bay and the NMK Bandas at Koobi Fora. There is need therefore to develop visitor facilities that will enhance visitor experience in the area. Under this objective, several actions have been designed to address problems related to tourism facilities.

Visitor facilities at SNP are shown in Figure 11.

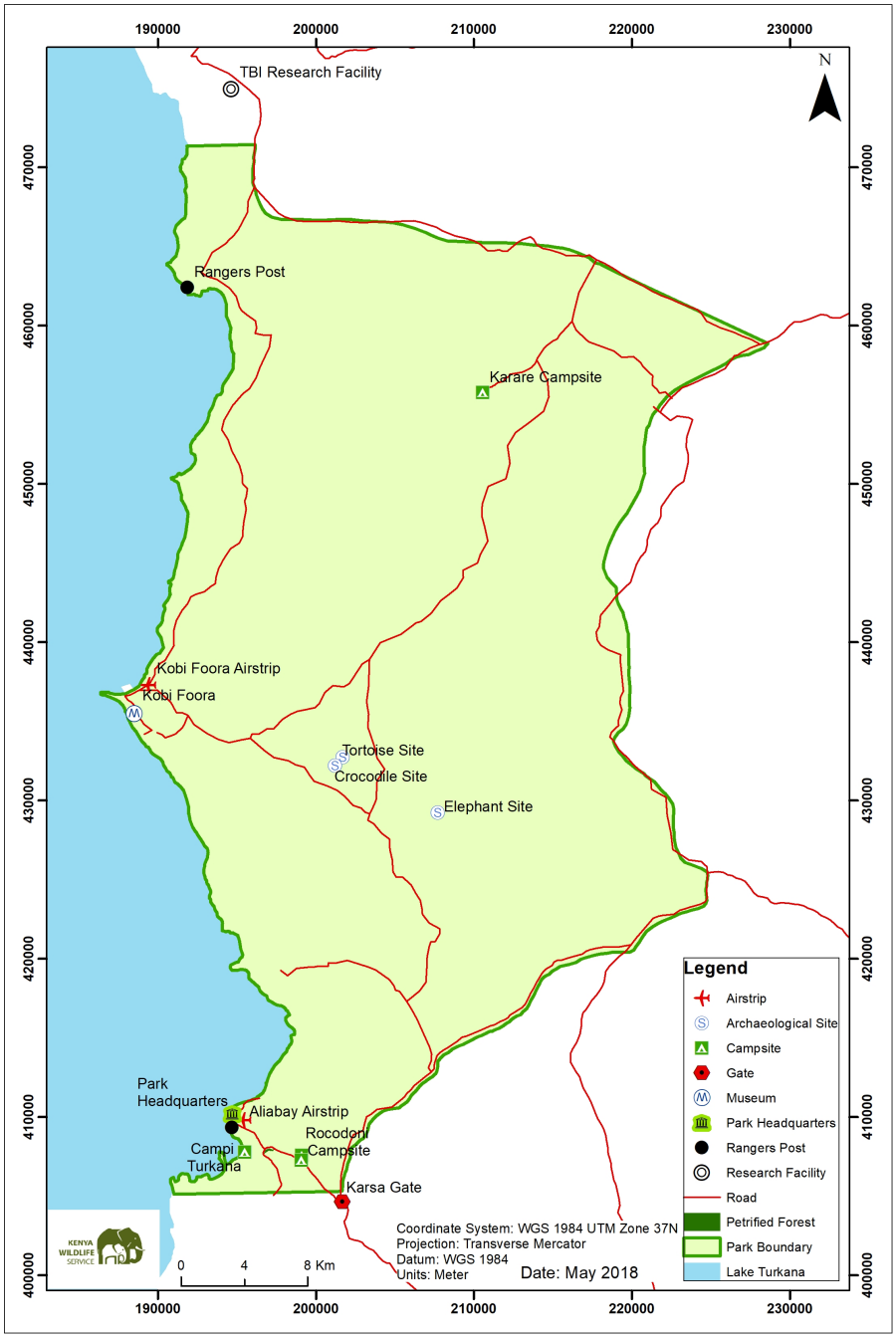

Figure 11: Tourist facilities in SNP

Action 2.1: Establish eco-lodges

By incorporating the prehistory and the unique ecology of this area, LTNPs can be turned into a destination for various visitor market segments. Visitors to the area will require accommodation to ensure they spend more time in the area. Hence, under this action, three eco-lodges will be developed along the shore line; one at Campi ya Turkana, another at Koobi Fora (NMK) and the last one at Kokai. Further, high end, low impact ecolodges will be

established at South and Central Island National Parks. Towards this, a Public Private Partnership (PPP) model will be explored to ensure that high quality facilities are developed in the LTNPs. It is expected that development of low impact ecolodges at the two Island parks (Central Island and South Island) will boost security in these parks minimising illegal activities.

Action 2.2: Develop visitor information centres and displays at key entry points

Informing and educating protected area visitors about the PA's biodiversity values ensures that visitors get the most out of their visit, and provides a much-needed alternative activity to game viewing. Interpretation facilities also provide a unique opportunity for PA managers to communicate directly with visitors, for example, to raise awareness of PA rules and regulations.

Unfortunately, there is no visitor information centre at LTNPs to offer information to the visitors who come to LTNPs. It is in this regard that the construction of small visitor information centres is proposed. The centres will serve as repositories and source of information about the area to the visitors. In addition, educational groups may get this crucial information through a variety of media outlets such as posters, books, and talks. Gift shops will also be included for visitors to obtain some souvenirs and artefacts.

Action 2.3: Develop a desert museum

Despite there being a display of fossils and animal remains at Koobi Fora, there is no such facility at the Sibiloi National Park offices to display wildlife species in the LTNPs. Therefore, the development of a desert museum is proposed. This can be constructed through collaboration between KWS and NMK. The proposed desert museum will be used to display various artefacts and stuffed animals in their 'natural habitat'. This facility will also provide important information on the various cultures and communities that live around the area. Hence, the facility will be established by a project implementation committee comprising of members drawn from the local community and government technical advisors from NMK, KWS and the local administration.

Action 2.4: Establish an aquarium and fisheries museum

A large portion of the LTNPs is in the lacustrine environment. However, there is no display to showcase these habitats and their associated wildlife species. The plan proposes the development of an aquarium and fisheries museum, which will showcase the different fish species, their habitats and behaviour. In addition, there is a lot of data, information and knowledge collected by the KMFRI team studying Lake Turkana and the two island parks. This information could be packaged to give an interpretation of the aquatic environment.

Action 2.5: Develop bandas and a new guesthouse

There are very few KWS bandas in the LTNPs. Only two, five-bed room guesthouses are available in Sibiloi National Park at the park headquarters. NMK operates four bandas with 32 beds and a guesthouse with two beds. With the anticipated increase in visitation as a result of increased air traffic once the airstrip is extended to meet Kenya Civil Aviation Authority standards, additional accommodation will be essential. During the plan period, another site in Sibiloi National Park will be identified for the construction of bandas. In addition, bandas

need to be constructed at the South Island Park headquarters at Loiyangalani. It is proposed that they be of 20 beds each to begin with. This will go a long way in reducing the visitor accommodation challenges in the LTNPs area.

Action 2.6: Establish new campsites and maintain existing ones

Currently, the vast majority of the special campsites are located within or adjacent to the area's low-use zones. There are currently very few special campsites in the remote parts of the area. Yet, special campsites are much-sought-after especially by high-end tourists who seek solitude. Therefore, in order to capitalise on this potential, and to provide a relatively rapid method for increasing visitor use in the three LTNPs parks, special campsites will be established in South Island and Sibiloi National Parks while the existing ones will be maintained. These sites will then be incorporated into the existing special campsite booking system.

Objective 3: Tourism management and administration systems strengthened

Tourism is dynamic industry that involves diverse players with different interests and opinions. A holistic approach to management of tourism is needed to guarantee sustainability and maximize tourism products within the LTNPs to achieve maximum benefits. This includes developing systems for marketing, communication, developing tourism products, and conflict resolution mechanisms to enhance the tourism product in the area. The following actions will be undertaken to meet this objective:

Action 3.1: Harmonise KWS and NMK visitor accommodation and services tariffs

As mentioned elsewhere in this document, both KWS and NMK are involved in tourism management activities in the SNP. There is therefore need for a common policy on revenue collection to avoid charging different tariffs for the same service e.g. aircraft landing fees. In regards to this, revenues collected by KWS will include park entry fee, camping fees, and aircraft landing fees and fishing licenses. Vehicle fees as well as revenues earned from visiting researchers will be collected and retained by KWS. On the other hand, tourists will also be required to pay the KWS-approved tariffs. Similarly, visiting researchers should be subjected to the general research policy on long-term research projects within parks. However, any visiting NMK staff on official duty holding a valid NMK identity card will be admitted free of charge.

Action 3.2: Carry out regular inspections of the LTNPs tourism facilities

It is a statutory requirement under the Environmental Management and Coordination Act (1999) for all tourist camps and lodges carry out an initial environmental impact assessment and subsequent annual audits. However, this provision is rarely adhered to partially because NEMA lacks the required capacity to enforce this legal requirement. In order to ensure that the new tourist lodges to be set up in LTNPs are environmentally compliant, hence minimize environmental pollution emanating from these facilities, LTNPs management will liaise with NEMA to ensure that tourism facilities comply with the environmental law. Further, in order to

understand the nature, extent and trends of tourism impacts, and consequently intervene promptly to avert major negative environmental and social impacts arising from tourism activities, LTNPs management will establish a tourism monitoring programme.

Action 3.3: Carry out regular visitor satisfaction surveys

The successful implementation of this programme, and in particular the delivery of an enhanced visitor experience, will depend on the availability of accurate and up-to-date information on the quality of the visitor experience, and the patterns and trends in tourism use in the area. The most important potential source of information on the quality of the visitor experience is from monitoring the satisfaction of visitors with the destination.

Hence, visitor satisfaction in the LTNPs will be monitored in liaison will the KWS Marketing and Business Department to determine the factors likely to affect the desirability of the ecosystem by visitors. Frequent interviews and visitor surveys will be carried out and results used to improve the tourism product in the LTNPs. The results will also be disseminated to the tourism stakeholders through regular briefings and reports to facilitate the implementation corrective action.

Action 3.4: Improve communication and collaboration with LTNPs tourism stakeholders

Tourism investors and operators are major stakeholders in the area. Once tourism facilities are developed, it will be vital that the concerns and advice of these stakeholders are regularly solicited in order to successfully realise the area's tourism potential. This group of stakeholders is also particularly well placed to advise management on key issues that may be negatively impacting the current tourism activities and operations in the area or that may be discouraging the development of new activities or investments. LTNPs Management will therefore organise consultative forums for tourism investors and facility managers to address emerging tourism issues in the area, and catalyze and monitor the implementation of the management actions set out under this programme.

Action 3.5: Avail tourist vehicles and boats for hire by tourists

Transport in the LTNPs is a major constraint. Access is only by four-wheel drive vehicles from North Horr and Loiyangalani; by boat from Kalokol or, alternatively, by air. There are very few vehicles that can be used for tourism. The plan proposes the purchase of two, four-wheel drive vehicles and three motor boats (one each for SNP, CINP and SINP) that can be hired by visitors. This move will help broaden tourist activities in the LTNPs.

Action 3.6: Implement measures to enhance revenue collection

Paper ticketing and receipting are the major ways through which revenues are collected in the LTNPs. Regrettably, this process is prone to fraud as paper tickets are susceptible to imitation and forgery by unscrupulous people as has happened elsewhere. The situation has been compounded by the few revenue collection centres, namely: Loiyangalani, Kalakol, Alia Bay, Eliye Springs, and Koobi Fora. The first four sites are manned by KWS personnel who collect park entry fees, camping fees, fishing permits (sports fishing) and landing fees. At Koobi Fora, however, NMK staff members collect park entry fees for KWS using KWS tickets. Ironically, this is the only revenue collected for KWS even though several other categories of revenue should be collected at this point.

The loss of revenue denies KWS and LTNPs the much-needed financial resources for purposes of supporting and facilitating the implementation of activities and programmes. During the plan period, KWS will post its staff to Koobi Fora to be in-charge of revenue collection. The northern gate will also be constructed and used for revenue collection. The gate will also help in monitoring cattle encroachment into the park.

Other actions the park management will introduce and develop to reduce and eliminate revenue loss and leakages include the introduction of ticket inspections, improved intelligence on fraud and strict penalties for offenders.

Action 3.7: Liaise with KWS Headquarters in the introduction of an improved revenue collection system

In a bid to check on fraud, enhance the ease of revenue collection and management and provision of accurate and timely information for visitor management, an improved revenue management system is necessary. The system should not only streamline and improve revenue collection but also provide a substantial amount of reliable and accurate information on tourism use patterns. This critical information can be used to inform the adaptive management of the area.

Activities under this management action will ensure that the management fast-tracks the introduction of an improved revenue collection and management system as a priority. It is crucial to ensure that adequate training, to both the customer care personnel and the park managers, accompanies the installation of this new system.

Action 3.8: Establish a system for providing ranger guide escorts for walking safaris and research activities

The development of the new visitor activities set out in the zonation scheme and in this Programme (such as night drives, short walks and nature trails) will require additional support/escort services from KWS rangers to ensure that visitors can safely undertake these activities within the area.

To enable efficient administration and delivery of these escort services and to promote uptake of the new activities by operators and visitors to the area, a centralised system for ranger escorts will be established in the area. Besides a booking system, this may also involve the establishment of central location(s) for collecting ranger escorts, linked to specific areas for undertaking night drives and short walks. The action will involve defining the ranger guide/escort requisition process and requirements, in consultation with key tourism stakeholders, which, once finalised, will then be disseminated to visitors and tour operators in the area.

The centralised system will then be piloted, and its operation and ease of use subsequently reviewed (also in collaboration with tourism stakeholders), and then revised and improved as necessary in accordance with the recommendations of the review process.

Action 3.9: Develop a LTNPs visitor code

There is need to control visitor behaviour in the parks to prevent degradation of the exceptional resource values in these parks. Some of the visitors to SNP are known to collect fossils and exit the park with them. Hence, to ensure that visitors are aware of the ‘dos and don’ts’

in the parks, a visitor code specific to resource management needs of the LTNPs will be developed. This is likely to include, for instance, the establishment of limits for visitors at an archaeological site at a time and the number of vehicles permitted at such sites. Once consolidated, these regulations will then be printed and made available at key points determined by LTNPs managers, such as entrance gates and/or visitor accommodation facilities in and around the area.

Objective 4. LTNPs promoted and marketed as a unique tourism destination

The future desired state of the LTNPs is one where the conservation area receives recognition as a unique tourism destination. In order to achieve this desired state, the LTNPs management will develop a suitable tourism marketing strategy which will include the development and dissemination of promotional brochures and interpretive materials. Further, it will promote regular tour package air flights and market the LTNPs products through organised events. Exploitation of different media sources for the preparation of a documentary to showcase the tourism potential of the area will also be sought. Additionally, the internet will be used through the development and maintenance of a website on the LTNPs and its environs. These actions are elaborated in the following sections.

Action 4.1: Develop a tourism marketing strategy for LTNPs

Overwhelmingly, LTNPs is perceived as a preservation of prehistoric heritage sites with no tourism potential. This skewed image calls for a dramatic change in the mindset and portray these parks as more than just preservation of the archaeological sites but a place that has high tourism and business potential.

Lake Turkana National Parks will institute park image building, positioning, targeting segmentation and promotion activities. The fundamental objectives of these activities will be to promote the image, products and services of these remote serene parks. Using this strategy, the park management intends to target appropriate stakeholders whose aim will include, but will not be limited to persuading them to enter into partnerships geared towards preservation of fossil sites, conservation and promotion of wildlife tourism. The parks will also be branded to promote and strengthen their visibility among targeted stakeholders, customer segments and the general public.

More importantly, communication and promotion activities will be carried out with the objective of informing stakeholders, collaborators and targeted customers about the parks activities, products and services. The promotion activities will be used to strengthen the parks and product brand images and educate the public.

Action 4.2: Develop and disseminate promotional brochures and interpretative materials

Though promotional materials like brochures are currently in use, they are not regularly updated to reflect the new products. This leads to insufficient and inaccurate information being shared with the visitors. This plan aims to periodically redesign and produce up-to-date promotional materials that will ensure that current information is provided to visitors. Optimal dissemination methods will be used to ensure that the promotional materials developed

reach the target clientele on a timely basis. This will be achieved through collaboration with stakeholders.

Action 4.3: Prepare a documentary on the tourism potential of the area

Documentaries are some of the most effective channels through which awareness can be created. Destinations around the world have also embraced this method as one of the key marketing strategies through which visitor interest is elicited. The LTNPs lack a well produced documentary showing the various attractions, cultural diversity, activities and products in and around the LTNPs. This plan aims to guide the preparation of a video synopsis and in collaboration with KWS, NMK and other stakeholders, to produce a documentary that would effectively display the uniqueness of the LTNPs and its environs. Through joint marketing with stakeholders, this would help change the existing perception and attract more tourists to these parks.

Action 4.4: Promote regular tour package air flights to the area

Because of the low infrastructural development, LTNPs have lost out on maximization of their potential. Many visitors who have shown interest in visiting this area end up cancelling or choosing a different site due to poor accessibility.

Through upgrading the current existing airstrips at Alia bay and Koobi Fora, the various attraction sites like the Elephant and Tortoise site at Sibiloi National Park will become more accessible. KWS and NMK will liaise with airline companies already operating in northern Kenya to organise trips to the LTNPs.

Action 4.5: Develop and maintain a website on the LTNPs and its environs

The internet has grown to be the single most important source of information for persons seeking to travel. Though there is an existing web site for SNP, it has been underutilized and currently remains dormant. Currently there is very little information on the LNTPs and their surrounding areas to inform persons who might be interested in various attractions or activities in the area. Hence, a website developer will be approached to upgrade and regularly update information on the LTNPs and the surrounding areas.

Action 4.6: Market LTNPs through organized events

There are regional cultural events that are organised annually by the Marsabit and Turkana County Governments. These events include the Loiyangalani festival, Kalacha Festival, and Tubong'u Lore. These events offer attractive platforms for marketing the LTNPs and their attractions. Hence, LTNPs management will ensure that the three parks are marketed during these regional events.

Community Partnership & Conservation Education Programme

Programme Purpose and Strategy

The purpose of the Community Partnership and Conservation Education Programme is:

> To enhance community support for conservation at the LTNPs and promote conservation sensitive land uses to improve community livelihoods

Majority of community members living around the LTNPs directly depend on natural resources for livelihood. They are mainly pastoralists and fishermen. This means that as their population increases, human activities in the greater landscape increasingly impact negatively on the conservation of the LTNPs. The activities include increased cases of livestock incursion in SNP, illegal fishing in all the three LTNPs, and habitat destruction through construction of manyattas and livestock bomas in SNP. The communities adjacent to SNP view the park as the last resort for pasture and water for their animals during the dry season; hence the high livestock impact on the park's resources.

In response to this dire situation, the Community Partnership & Conservation Education Programme will implement a comprehensive set of activities aimed at mitigating the negative impacts of the increasingly interconnected relationships between the LTNPs and the communities living around them. It will also capitalize on opportunities where both conservation goals and community livelihood needs and aspirations can be reconciled.

Guiding principles

In implementing this programme the LTNPs management will be guided by the following principles:

- **Developing open and constructive relations between KWS and local communities**
- **Building community support for the conservation of the LTNPs by ensuring that the LTNPs have a positive impact on the lives of adjacent communities**
- **Reducing long-term threats to the LTNPs by promoting conservation-based and conservation-friendly land uses in the greater LTNPs ecosystem**

These guiding principles are briefly described and explained in the following sections.

Developing open and constructive relations between KWS and communities

As community livelihood activities taking place around the LTNPs increasingly impact negatively on the area's conservation, mutual relations between LTNPs managers and communities are essential to ensure that both parties can raise issues of mutual concern before they escalate into serious problems. Such a strategy also ensures that the involved parties can work together when livelihood and conservation goals align. While law enforcement is an effective way of combating illegal activities within other protected areas, this is a challenge in LTNPs as the parks are located in remote areas. The development of good relations with

surrounding communities is therefore essential to gain support for the LTNPs. It is expected that if the community and KWS work closely it will be possible to resolve conservation related conflicts amicably reducing need for law enforcement activities.

KWS mission statement states that the Service will sustainably conserve and manage its wildlife in collaboration with stakeholders for posterity. Collaborative partnership is also one of the strategic themes in the KWS strategic plan. In the same plan, one of the strategic objectives is to "Enhance collaboration with Customers and stakeholders". Furthermore, Section 40 of the Wildlife and Conservation Act 2013 further indicates that individual land owners or communities may establish community wildlife associations. They can then register under appropriate laws and be recognised by the County Wildlife Conservation and compensation committee. The need for constructive collaboration is thus recognised at the corporate level and national level.

It is therefore vital that LTNPs managers proactively engage the neighbouring communities to ensure that LTNPs-community interactions do not simply focus on damage mitigation and conflict resolution, and that KWS' interests are not seen as being restricted to dealing with problems that impact on the management of the protected area, but also in addressing the concerns raised by communities themselves, or capitalising on potential synergies between community and KWS activities.

As such, the first guiding principle of this management programme is that KWS will strive towards developing open and constructive relations between LTNPs managers and neighbouring communities in order to strengthen KWS-community collaborations and increase community support and contribution to the LTNPs' conservation.

Building community support for the LTNPs' conservation

Historically, LTNPs -adjacent communities have borne many of the costs associated with the area's conservation, through reduced access to previously utilised natural resources and restrictions on access to areas of cultural importance. In addition, many of the benefits resulting from the area's utilisation, especially from tourism, have mainly benefited KWS and NMK or tourism businesses based in urban centres, or even abroad. This situation, combined with a lack of community awareness of the national and global importance of the LTNPs and the exceptional biodiversity and archaeological importance it contains, has negatively impacted community support for the area's continued existence and KWS management activities. This in turn has exacerbated the community-related problems that LTNPs managers have to deal with and consequently increased both the complexity and costs of LTNPs management.

A major thrust of this programme, therefore, will be to rectify this situation and encourage overall community support for the LTNPs conservation through efforts to reduce the costs incurred as a result of conservation, increase direct benefits to communities from the area and improve the community's awareness and appreciation of the area's importance.

Promoting conservation-friendly and sustainable resource-use practices in the greater LTNPs landscape

As is common with the rest of Kenya, human population around the LTNPs has increased over the years. The increased population size has increased pressure on the parks through over-fishing, destruction of breeding sites, damages to prehistoric sites, habitat destruction through livestock incursion all of which are set to intensity during the lifespan of this management plan.

As such, due to the high potential contribution that inappropriate activities can make both to the conservation of the LTNPs and to the incomes of LTNPs adjacent communities, through this programme, KWS will, wherever possible, strive to promote and strengthen conservation-friendly and sustainable resource-use and development practices in the LTNPs ecosystem.

Management objectives and Actions

Objective 1: LTNPs-community communication and collaboration mechanisms established and strengthened

The LTNPs are surrounded by diverse communities whose livelihood is dependent on pastoralism and fishing; hence they exert a lot of pressure on the parks. Nevertheless, the LTNPs are fortunate that there are also a number of community-based organisations, NGOs and other stakeholders that LTNPs management can potentially engage with. The support and collaboration of these key stakeholders is vital for the continued conservation of the LTNPs and the exceptional biodiversity it contains. However, in the past, KWS has mainly engaged with these stakeholders on an informal basis. Hence, the collaboration was left vulnerable to changes in both personnel and KWS organisational priorities. In addition, there are also important wildlife areas around the LTNPs where representative organisations or institutions that KWS can engage with are either absent or weak.

Therefore, the desired future state that this objective aims to achieve is one where effective and sustainable communication and collaboration mechanisms are in place in the LTNPs. This will enable LTNPs-adjacent communities, other stakeholders and LTNPs managers to efficiently and effectively work together. These communication and collaboration mechanisms are essential not only in supporting the development of supportive and constructive relationships between these groups, but also in enabling both KWS and these key stakeholders to raise issues of mutual concern before they escalate into serious problems, and to work together in achieving common goals.

Management actions under this objective focus on formalising and strengthening existing collaborations between KWS and these key LTNPs-adjacent stakeholders, and on supporting the establishment of representative community organisations where they do not exist. These management are elaborated further in the following sections:

Action 1.1: Strengthen and support activities of existing community groups around the protected areas

There are a number of women groups in the area. They include Elmosaretu in Loiyangalani and Mazingira in North Horr, among others. These groups were started mainly to provide a conducive forum where women could pool their resources and get alternative sources of income to sustain their families. KWS, having recognised the critical importance of such initiatives, supported the groups to establish eco-lodges both at North Horr and Loiyangalani.

Over the years, the groups have operated with mixed success. Sometimes they have incurred losses from the initiatives supported by KWS. This has even compelled the groups to

seek more funding from KWS and other organisations for the maintenance of the projects and to develop other related projects. A case example is Elmosaretu, whose eco-lodge is now in a deplorable condition, leading to reduced visitation. Currently, the same group is looking for funding to establish a campsite. This deplorable situation is mainly prompted by high illiteracy levels, inadequate marketing skills and poor book-keeping.

In order to ensure sustainability of such projects, more training must be given to the women groups, with critical focus on book-keeping and management. This should be coupled with more exposure visits to already successful groups. KWS will endeavour to strengthen the capacity of existing and new groups through training and more exposure so that their chances of success are enhanced.

Action 1.2: Establish and strengthen game scouts

The conservation challenges facing LTNPs could easily be mitigated through the existence of scouts who would be the park's ambassadors in the community. The scouts, being people from within the communities, would face little resistance from the people. At the same time, they would have the added advantage of cultural knowledge. Hence, LTNPs management will support establishment of game scouts in the LTNPs ecosystem to augment the work of KWS. These game scouts will be trained in basic paramilitary skills and deployed in conservancies that will be established in the area.

Action 1.3: Promote and support the establishment of Natural Resource Management Teams

The Dasanach, Gabbra and Turkana are the major indigenous communities living around the Sibiloi National Park. These are all nomadic pastoralist communities that derive their livelihoods mainly from livestock and thus, they traditionally migrate into the national park in search of water and pasture for their livestock. This is because when the national park was created, there was no definite strategy developed to address the issue on how the community could access substitute grazing grounds, water sources and livelihoods. Furthermore, no systematic plans were created to raise conservation awareness of the local communities on the benefits of the national park and its natural resources.

In order to reduce livestock menace within the park and by extension the perennial conflict between the park management and the communities adjoining the park, grazing committees were formed in June 2011 during which 15 community members from these communities were selected as members. Each community formed its own grazing committee, of five persons each. In addition, a Natural Resource Management (NRM) team was also formed and trained in 2013 to spearhead planned grazing, community mobilization, and holistic management's core concepts and principles. The main functions of the NRM include educating the community on grazing management, monitoring the grazing management process, and documenting changes, if any, and co-ordinating grazing within the Dasanach community.

On the other hand, the grazing committees are essential tools of communication between the pastoralists and the SNP management. The committees' main function is to ensure that the grazing formula is strictly followed to guarantee availability of pasture outside the protected areas throughout the year. This move is expected to tame cases of livestock incursion into the park. Although the grazing committees have already been formed, they have not been very effective in their duties. This calls for more training, exposure visits, conservation education and resources to effectively perform their duties.
KWS therefore intends to promote, support and increase the capacity of the NRM team and grazing committees so that the grazing plan objectives are achieved for the benefit of the

community and conservation agenda. In addition, following the same participatory planning process adopted for the Dasanach community land, grazing plans will be prepared for the Gabbra and Turkana communities who border SNP to the East and South respectively. Figure 12 shows livestock incursion routes in SNP while Figure 13 shows permitted livestock corridors to lake Turkana.

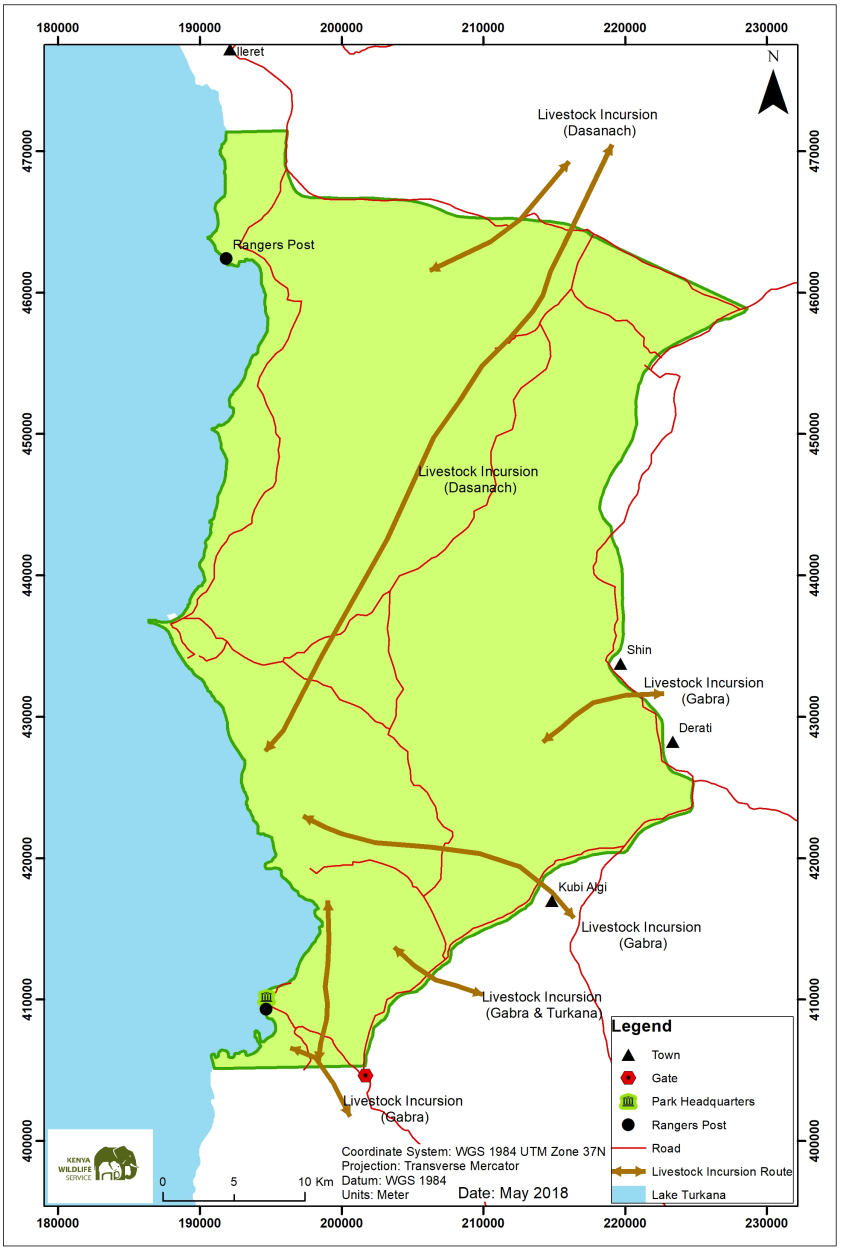

Figure 12: Livestock Incursion routes in SNP

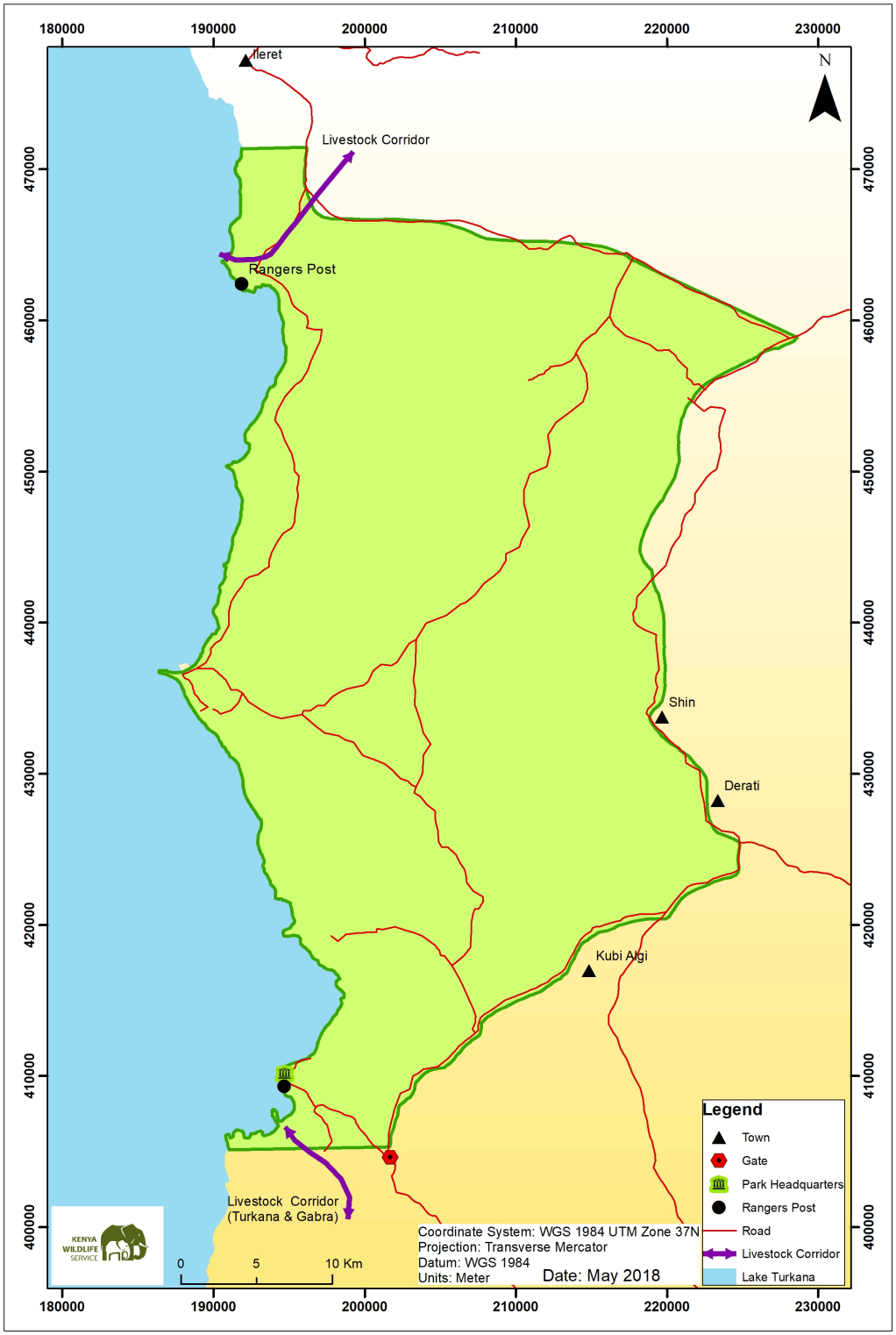

Figure 13: Livestock corridors

Action 1.4: Collaborate with government and local non-governmental organisations

There are a large number of government agencies and non-governmental organisations active around the LTNPs. This is due to catastrophic drought incidences and the perceived under-development in the area. Due to the above effect, 70 percent of the population surrounding the protected areas live below the poverty line and as such are relatively vulnerable. This situation has led to increased conflicts of interest and duplication of functions among several NGOs, or between NGOs and KWS. This has resulted in the sub-optimal use of resources and staff time by all the organisations involved.

In addition, although a number of the NGOs operating in and around the area are well known (such as VSF, Solidarites, Pacodeo, UNICEF, among others), the current knowledge of all NGOs operational in the greater LTNPs remains incomplete. This increases the risk of conflicting objectives and duplication of activities. As a first step towards improving collaboration with and between these organisations and extenuating conflict between Sibiloi National Park and adjacent communities, Sibiloi NP management and VSF-G organised a stakeholders meeting in Marsabit town. It is here that a contingency plan was developed for North Horr Sub-County. It is, however, important to conduct an inventory of all NGOs and CBOs operating in and around the areas, their activities towards enhancing communities' livelihood and their relevance to wildlife conservation.

Once this has been completed, regular meetings will be conducted, chaired by the CWS Warden, between KWS and NGO representatives to ensure that LTNPs management is updated on and can assist in the coordination of activities around the area. In addition, representatives from LTNPs management will continue to attend Sub-County Steering Group Committee meetings to ensure that they are kept abreast of any new developments.

And in order to succeed in conservation in the area, LTNPs management will also collaborate with different government ministries operating within the LTNPs-adjacent areas. This will only be possible if the respective LTNPs management actively participate in activities within the County. As for the case of Sibiloi National Park, the collaboration is ongoing. Under the leadership of the North Horr Sub-County Commissioner, KWS has actively been engaged in various events including participating and providing a venue for the peace meetings.

Based on the foundation already established LTNPs management will continue to foster collaboration and partnership with government and non-governmental organisations to promote conservation while at the same time addressing the felt needs of the surrounding communities.

Action 1.5: Nominate, gazette honorary wardens and work together to sensitize the local community on conservation

The remoteness of the LTNPs limits the effectiveness of KWS management. This, therefore, calls for soliciting support from individual community members in implementation of conservation actions in community areas. LTNPs management will therefore identify appropriate persons of integrity from the Dasanach, Gabbra and Turkana communities who have a passion for, and the necessary understanding of conservation and management issues, and recommend them for appointment as honorary wardens.

Objective 2: Community benefits from the LTNPs improved

PA-adjacent communities frequently bear a disproportional share of the costs associated with conserving the protected area, compared with the benefits the PA generates. These costs include human-wildlife conflict as well as other opportunity costs incurred where areas traditionally used for livelihood or cultural activities are no longer available to the concerned communities.

This traditional imbalance between community costs and benefits has often resulted in resentment and poor relations between PA managers and PA-adjacent communities. This, in turn, has frequently led to increased conflicts and complexities in the management of these areas. In some instances, this has impacted negatively on the conservation of the key values the area was initially created to protect. Consequently, this objective has been developed to address the community cost-benefit imbalance, and to realise the desired future state where LTNPs-adjacent communities are gaining direct benefits from the LTNPs existence, and as a result, their support for the area's continued conservation is enhanced. Four management actions have been developed to achieve this important objective.

The first two actions focus on implementing and enhancing support to the ongoing KWS community development projects in key areas around the LTNPs, and enhancing employment opportunities for local community members (and in particular formalising the employment of casual workers from around the LTNPs) and coming up with new community conservation enterprises and alternative sources of livelihood. All three of these management actions are elaborated in more detail below.

Action 2.1: Implement and support new and ongoing community development projects

KWS has an extensive history of assisting park adjacent communities by funding community projects[8]. This not only helps the Service in fulfilling its corporate social responsibility but also increases community support for conservation. However, some of the community development projects have faced immense challenges in the past due to lack of project management skills among community members. To address this situation and ensure sustainability of both old and new community projects that KWS could potentially support, the LTNPs management will periodically carry out regular trainings to the existing Community-based organizations or women groups especially in book-keeping, marketing and management. Also to be factored into these trainings are the participatory rural appraisals for community representatives from target communities to identify appropriate projects that have strong community support, as well as the capacity-building needs for their successful implementation.

Once appropriate projects have been identified and agreed with the target communities, the LTNPs management will provide supplementary support and training to community members in developing project proposals, which can then be submitted for funding. The LTNPs will also continue to provide ongoing material, technical and other support to ensure the successful implementation of the funded projects, as well to any existing community development projects as required.

[8] These projects include construction of classrooms, construction of eco-lodges and water supply projects. For instance a school was constructed at Illeret (1994), Mazingira Lodge in North Horr (2001), Moseretu Lodge in Loiyangalani (2001). Ongoing projects include water for the Dasanach community in Illeret and proposal for the rehabilitation of Mazingira Lodge.

Some of the projects, especially the water projects, will reduce the pressure of livestock intrusion in Sibiloi National Park. Hence, other sites with water supply problems will be identified in the Gabbra and Turkana community lands and water sources developed to ensure that livestock intrusion in the park is minimized.

Action 2.2: Enhance employment opportunities for local community members

One of the most direct ways to improve the linkages between the conservation of the area and the community's well-being is by engaging members of LTNPs-adjacent communities in different tasks necessary for improving the management of LTNPs. Currently, almost all the road maintenance labourers are casuals drawn from the local communities, especially from Loiyangalani and Illeret.

However, there is only one casual worker from the Gabbra community, a community that is less inclined towards taking on these roles. Interestingly, most of the staff members who were previously employed from Dasanach community as rangers have left the service to continue with pastoralism. There is, therefore, still need to mobilise and employ people more from that community.

To further enhance relationships with surrounding communities, LTNPs management will liaise with KWS Headquarters to ensure that these and other casual workers already engaged within the LTNPs are, wherever possible, employed as permanent employees, and, as such, enjoy the improved security and benefits associated with this type of employment. In addition, as and when necessary for specific tasks in the LTNPs, casual employees will continue to be sourced from the local communities.

Action 2.3: Support establishment of community conservation enterprises and alternative sources of livelihood

Community-based natural resource management and poverty reduction strategies recognize that communities are often best placed to conserve natural resources and engage in activities that would reduce poverty levels. In order for conservation to succeed, KWS must support the communities in coming up with alternative sources of livelihoods. This can be done by supporting the establishment of diversified income-generating activities through the establishment of curio shops (Loiyangalani, Illeret, North Horr and Kalokol) and eco-lodges in the greater LTNPs landscape, direct transportation and marketing of their livestock, and the establishment of a community Museum in Illeret. KWS will also buoy up locally-managed ecotourism projects by facilitating and building the capacity of local organizations to develop ecolodges and cultural centres to enable the local communities to benefit directly from tourism and learn more about their cultural heritage.

Action 2.4: Support establishment of community wildlife conservancies around LTNPs

The development of community conservancies has a two-pronged benefit for conservation of the protected areas. They not only ensure that large parcels of land remain compatible with wildlife conservation but also provide the much-needed revenues to local communities, which increases community support for wildlife conservation. KWS will therefore conduct ambitious awareness campaigns to win communities support and conduct exhaustive training to the communities, especially the opinion leaders. Acquaintance visits to some of the successful conservancies will also be organized for members of the local community. Once this is done,

identification of suitable areas for promoting the establishment of conservancies coupled with the mapping of potential conservancies in collaboration with relevant authorities and the subsequent drafting and registration of conservancy documents will be carried out. The areas that have great potential for conservancies are those community land bordering Sibiloi National Park and Kaldera Island near El Molo Bay.

Objective 3: Understanding and awareness of LTNPs conservation importance improved

Environmental education is a very essential strategy in enhancing community understanding and appreciation of conservation. As such, this objective has been developed to realise the desired future state where the existence of the LTNPs is valued and supported by local communities and visitors.

In order to achieve this objective, a number of management actions have been developed focusing on establishing and equipping educational facilities in LTNPs especially in Sibiloi National Park, Kalokol, Loiyangalani and Illeret; establishing a cultural and natural heritage outreach programme as part of local education curriculum; promoting environmental education through awareness campaigns using schools, local barazas, women groups and workshops. These actions are as discussed below:

Action 3.1: Establish and equip education facilities in LTNPs and environs

One of the core functions of KWS is to provide wildlife education and extension services to the public to gain their support for wildlife conservation. The establishment of a conservation education centre in Sibiloi National Park would be very vital in providing conservation information both to students (both foreign and local) and the general public who visit the area. The centre will provide park visitors with opportunities to connect and understand nature, thus enhancing enjoyment of the parks and appreciation of conservation efforts.

Action 3.2: Establish a cultural and natural heritage community outreach programme

The communities surrounding LTNPs are known for their unique and attractive cultures which to a large extent has remained unadulterated. In consultation with NMK, KWS will develop a cultural and natural heritage outreach programme. The programme will be tailored to the unique cultures of the nomadic pastoralist communities and tap into traditional knowledge and customs. This will be used to promote awareness and encourage the community members to be stewards of conservation. KWS will develop and implement this programme so that cultural practices compatible with conservation are encouraged within the formal learning institutions while retrogressive ones are discouraged. This would inculcate the culture of conservation and care of nature in the pupils when young.

Action 3.3: Raise general awareness of the LTNPs conservation importance and values

For a long time, wildlife has been regarded as a source of suffering for many Kenyans. This calls for a rethinking. There is need to look at wildlife conservation and management from a different perspective in order to understand the value of this important tourism product. The

role of wildlife in the economic development of the country needs to be communicated to the people that bear the brunt of hosting wildlife on their land. The media, including radio, television and newspapers, can play an important role in conveying conservation education messages to LTNPs-adjacent communities, and beyond.

In order to take advantage of these mechanisms for improving awareness and understanding of the LTNPs, and the wider work of KWS nationwide, LTNPs will collaborate with local media in promoting wildlife conservation, through, for example, using the radio stations that have been established in Marsabit and Lodwar. LTNPs will also participate in appropriate local and national environmental awareness events aimed at raising awareness about the LTNPs and their exceptional resource values. Annual special events like Lake Turkana Loiyangalani Festival and Kalacha Festival can indeed provide an excellent opportunity to raise awareness for the parks.

Objective 4: Human-wildlife conflict reduced

The conflict between people and wildlife on the periphery of the LTNPs is not high. The main problem animals include the crocodiles, hyenas, wild dogs and snakes. As human populations around the LTNPs continue to rise, and the over-reliance on the natural resources increases, conflicts are bound to increase. This objective has therefore been developed to bring about the desired future state where Human-Wildlife Conflict (HWC) incidences around the LTNPs are minimised, in order to both reduce the negative impacts resulting from the LTNPs on adjacent communities, and to improve overall LTNPs-community relations. In order to achieve this objective, a number of management actions have been developed both to prevent and mitigate cases of HWC. These actions are explained below.

Action 4.1: Train community game scouts and other volunteers on HWC mitigation measures

Increase in human population around LTNPs has led to increased pressure on predominantly wildlife-occupied areas. This has also led to encroachment into key wildlife habitats. Cases of HWC are therefore increasing day by day, calling for a more collaborative and participatory approach given the nature of the area and scarcity of resources. Although this is ongoing, more training for the community game scouts is recommended as this would reduce risks to the trap handlers and increase the chances of success. This move would also assist in quick response and prevent severe loss to the community in cases of wildlife conflicts. Once the trap has been set out, the scout would communicate to the nearest police station which would then relay the information to the LTNPs management for further action.

Action 4.2: Create awareness on crocodile behaviour and how to avoid conflicts

Most of the death and injury cases around LTNPs are a result of crocodile attacks. This is probably because some of the fishermen do fishing in the breeding sites of the crocodiles, hence infuriating this dangerous animal. Though awareness campaigns are ongoing, this must be scaled up further going by the recent increase in cases of crocodile attacks, especially in Sibiloi National Park, at Illeret and at Kalokol. Deaths and injuries will be reduced once the fishermen avoid the breeding areas of the animals. LTNPs management will foster the spirit of mutual coexistence between the Nile crocodiles and the adjacent communities through educating the affected communities on crocodile behaviour and how to avoid or react to crocodile attacks.

Action 4.3: Provide support to enhance the compensation claim process

Adequate and timely compensation for wildlife damages can go a long way to cultivating a positive relationship between KWS and LTNPs-adjacent communities. LTNPs have in the past faced challenges in processing compensation claims due to low levels of awareness by the communities on compensation requirements and procedures. LTNPs communities will therefore be supported through capacity building so that they know the compensation procedures and requirements. Additionally compensation forms will be made available through community leaders or state administration and speedy processing of compensation claims facilitated by the LTNPs management.

Protected Area Operations and Security Programme

Programme Purpose and Strategy

The purpose of the Protected Area Operations and Security Programme is:

> To support effective implementation of the other management programmes and protect wildlife and archaeological resources

The remoteness and limited infrastructure in much of the LTNPs present weighty challenges to ensuring that the area is well maintained as a secure environment for the area's natural resources, KWS staff and assets, and visitors. The main protection problems facing LTNPs are livestock incursion in SNP, poaching of wildlife and illegal fishing. Herdsmen, who are usually armed, bring their livestock into Sibiloi National Park for pasture and water degrading the habitat through trampling and overgrazing. They also cut woody vegetation to construct livestock sheds, commonly referred to as bomas.

Also under threat is the aquatic restricted zone in all the three parks where fishing is not permitted. Fishermen often trespass into this zone and get arrested. However, the extent of the restricted zone is not clearly marked with mooring buoys making it difficult for fishermen to know if they have trespassed.

Guiding principles

The guiding principles describe key factors taken into account in the development of the PA Operations Programme and that influence the way the programme is implemented to achieve the above programme purpose. The guiding principles are:

Providing adequate management resources

Underpinning every management action designed to achieve each of the management objectives outlined in this management plan, and thus achieve the desired future condition of the LTNPs, is the LTNPs staff that will be responsible for implementing them. This staff not only require conducive working conditions and facilities, but also the necessary equipment and training to carry out their duties. The scope of work set out in the plan's five programmes is an ambitious undertaking, and will require increases in both the levels of human resources available in the LTNPs, and in other management resources required to support the implementation of the management actions set out in this plan. As such, this programme will aim to ensure that LTNPs human resources are of sufficient number and efficiently allocated in order to implement this plan's management actions, and that the other resources required to deliver the plan's management actions are made available.

Maintaining institutional collaboration

Wildlife conservation continues to face quite a lot of challenges, ranging from climate change, competing land use, increased human population, poaching and environmental degradation, among others. Addressing these threats calls for close collaboration among KWS, government agencies and non-governmental organisations in the area. Such collaboration is important as it facilitates effective sharing of information and minimises duplication and wastage of resources.

Hence, LTNPs management will therefore collaborate with all the institutions operating within LTNPs with a view of achieving the management objectives set out in this plan.

Enhancing wildlife and habitat protection

Despite the continuous efforts by the LTNPs management and various stakeholders to carry out community development and awareness projects, efforts to conserve this very important ecosystem continue to face many conservation challenges, ranging from livestock incursion, illegal fishing, habitat destruction, siltation, insecurity, among others.

Section 7(b) of the Wildlife Act 2013 states that the function of the service shall be to" *provide security for wildlife and visitors in national parks, wildlife conservation areas and sanctuaries".* Hence a guiding principle of this programme is to enhance wildlife and habitat protection by permanently keeping livestock out of the park, increasing park patrols, awareness creation, and provision of essential services to mitigate negative impacts of climate change, among others, in order to maintain the desired integrity of the protected areas.

Protecting archaeological resources

Despite the evident importance of archaeological resources, continued pressure on this incredibly fragile area of outstanding universal value has become a major cause for concern. The major threats to the archaeological sites are the annual influxes of livestock, picking of fossils mainly by the communities and natural degradation. The expected consequence of this impact is destruction of this cultural heritage which cannot be afforded by the nation.

LTNPs management will therefore employ a broader approach to dealing with the current archaeological conservation challenges. This will include increasing the local community' understanding of the archaeological importance through awareness creation, enhancing security of the archaeological sites and working closely with local conservation groups and grazing committees, among other strategies.

Management Objectives and Actions

Objective 1: Effective management systems and human resource capacity deployed

The success of any organization hinges on its human resources, for it is the employees who work towards the attainment of the organization's vision and mission. The desired future state of the LTNPs that this objective aims to achieve is therefore where protected area management systems, including institutional relations and human capital are effectively supporting achievement of the management plan goals.

This objective has therefore been designed to address shortfalls in institutional collaborations, particularly between KWS and NMK, and human resource capacity of KWS to effectively achieve the LTNPs management objectives. The management actions that will be implemented to achieve this objective are elaborated in the following sections.

Action 1.1: Institute a unified organisational structure in the LTNPs to strengthen the LTNPs management

As mentioned elsewhere in this plan, the LTNPs have no unified management and organizational structure yet the three PAs are listed as one World Heritage Site (Lake Turkana National Parks) by UNESCO. To facilitate ease of management and thereby enhance management effectiveness, there is need to reorganize the management structure of this World Heritage Site. To achieve this, a policy brief outlining the pros and cons of maintaining the current management structure and the need to have a unified structure will be prepared for KWS management. This policy brief will be presented to KWS Senior Management Committee and if approved it will be implemented at the LTNPs. The proposal is to have each of the three PAs managed by middle level Wardens who report to a Senior Warden in charge of the Entire World Heritage Site.

Action 1.2: Draw an MOA between KWS and NMK to streamline management of Sibiloi National Park

There is ambiguity on the management of Sibiloi National Park as it is gazetted as both a National Park and a National Monument under the management of KWS and NMK respectively. This dual status has brought about ambiguity in some aspects of PA management as both institutions strive to achieve their corporate goals. Both institutions are involved in revenue collection accruing from different products and services and the charges for similar charges at times differ yet the services are being offered in the same PA. To address this discrepancy in management, a memorandum of agreement will be entered between NMK and KWS in line with The National Museums and Heritage Act Cap 216 and The Wildlife Conservation and Management Act, 2013. This MOA will be drawn by KWS and NMK Advocates after completion of a consultation process involving KWS and NMK top management.

Action 1.3: Strengthen the human resource capacity of the LTNPs

KWS staff strength at Sibiloi and South Island National Parks comprises of 40 permanent staff. This is way below the optimum number required for this parks' prime management. For optimum park administration and management, the park requires an ideal strength of at least 88 staff. However, the human resource deficit is usually substituted by engaging casual labourers, who are employed on short contracts.

The LTNPs organizational structure lacks representatives of some Administrative Divisions such as Biodiversity Research and Monitoring and Corporate Support Services. To address the shortfall, research matters are handled at regional level with scientists based in Marsabit office while in others, the warden assumes their duties. In view of this LTNPs management will liaise with KWS Human Capital Division to deploy staff based on the determined staff optimum staffing levels.

Action 1.4: Train staff in relevant skills

The provision of sufficient and relevant training is vital in improving the capacity of personnel deployed to the LTNPs. This is not only important for improving their overall ability to carry out their assigned duties, but also for improving staff morale and opportunities for career advancement. In order to address the skills gaps, a training needs assessment will be carried out across all sections. Once this has been completed priority in situ and ex situ training will then be carried out according to the assessment's recommendations.

In addition, even as we seek to impart further knowledge to staff, more emphasis will be on gaining practical and applicable field knowledge, rather than the usual theoretical knowledge. Importantly, focus will be put on the following training courses for all staff members: Computer courses, customer care, GIS courses, data entry, emergency response and fire-fighting, environmental impact assessment, conservation planning, and archaeology courses.

Skill upgrading and regular range practice is essential in maintaining good performance of the security personnel. Range practice for rangers will therefore be carried out at least thrice annually. Ranger competitions between various platoons, though seldom carried out these days, would be enhanced to act as a motivational tool and enhance experience.

Action 1.5: Improve staff welfare and motivation

Sibiloi National Park management has already taken up steps to improve staff facilities and amenities at the park headquarters through the establishment of a canteen. The management has also furnished them with basic recreational facilities such as satellite television and a pool table. This measure has so far had positive impact on staff morale. With the foreseen paybacks, the plan will therefore be extended to a number of other administrative centres throughout the area.

In addition, to ensure that discipline and alertness is maintained at all times, especially with the uniformed cadre, standing orders and a code of conduct has been developed that will be applicable to the canteen. These orders will also support the management of the canteen by making provisions to ensure that they are well maintained, and that the lending systems are not abused.

In order to improve staff performance and output, team building is inevitable. Through combined effort, the personnel can interact and learn more about each other's strengths and weaknesses, collective team goals, mechanisms for enhancing achievement of goals and appropriate work ethic. Similarly, team effort enhances staff appreciation for emotion intelligence, hence assisting staff in developing trust and understanding of the different personalities among the teammates. It also improves the productivity in the long-term as well as ways of capitalizing on collective output. Therefore, this action will put emphasis on various team building approaches including staff campaigns, parties, competition, and retreats. During these team building periods, the management of LTNPs can articulate to staff their vision, status of various activities and assessment of activity implementation and performance among others.

Action 1.6: Strengthen collaboration between LTNPs managers

The interconnected nature of the three parks that makes up the World Heritage Site, particularly with regard to security, ecological and tourism issues, calls for a high degree of collaboration between the managers responsible for each park. The need for group effort will further increase during the implementation period of this management plan, which includes a number of actions that will be simultaneously implemented across two or more of the LTNPs. Regular meetings will therefore be held, chaired by the SW-LTNPs, between the three parks' senior management to ensure that management plan implementation is proceeding in a co-ordinated and coherent manner, and to address other issues of mutual concern.

Objective 2: Infrastructure to support tourism, ranger operations and administration improved

Action 2.1: Provide reliable water supply

There is usually plenty of surface water within SNP during wet seasons. The normally dry river-beds (laggas) are filled with water that flows towards Lake Turkana. The main laggas in the area include Roccodoni, Simba, Mchanga, Daudi, Ilkimire and Turbor. During the dry season, water availability is restricted to a few wells and springs within the Park. Due to scarcity of drinking water at the desalinization plant at SNP park headquarters will be rehabilitated to produce drinking water for staff.

Action 2.2: Construct and maintain residential and office buildings

The SNP Headquarters at Alia Bay has an office block, four houses for officers, a guest-house, nine houses for rangers, a canteen and motor vehicle workshop. Some staff houses have been fitted with solar power. However, the overall number of staff houses in the LTNPs remains insufficient, and most staff, especially those in the lower cadres, have to share houses. In addition, many of the houses that do exist are in a poor state. Many of them have asbestos roofing that needs to be replaced with appropriate non-toxic roofing materials.

In order to improve the overall administration and management of the area, additional staff houses will be constructed to house the extra rangers who will be stationed at the Park. Given the remote location, all staff houses will be provided with basic furniture. However, this will be preceded by an assessment of the construction and rehabilitation needs for staff housing for all three of the LTNPs. Once this has been determined, construction will then proceed in accordance with the needs defined, overseen by the Works Superintendent. The construction process will involve initial liaison with KWS HQ and civil works specialists to develop house designs and architectural plans, and the subsequent preparation of a construction timeframe, bill of works and accompanying budget.

The lifespan and condition of buildings depend on their maintenance. Since the capital investment for constructing buildings is high, it is important that the already constructed buildings are well maintained. During the plan period, adequate funds will be allocated in the annual budget for maintenance of buildings.

Action 2.3: Install and maintain park boundary markers

The current boundary pillars for Sibiloi National Park have been vandalized and are not clearly visible. This makes it difficult for pastoralists and KWS staff to know whether they are inside or outside the park. The boundaries of the park should therefore be clearly marked with visible and unbreakable beacons. Where it is geographically possible, a road should be cleared the length of the boundary for easy demarcation and movement of KWS personnel. Moreover, there are also no buoys to mark fish and other aquatic life breeding grounds on Lake Turkana. To ensure fish and other aquatic life breeding ground within the three parks are not encroached by fishermen, the park boundaries in the lake will be clearly marked using visible buoys to alert fishers and other users of the lake of these important and restricted areas.

Action 2.4: Improve and maintain the road network in SNP

Sibiloi National Park road network totals about 300 kilometres. This road network, though adequate, lacks regular maintenance. The only classified road traverses the park from the south through Karsa Gate to IIlleret in the north. All other roads are unclassified tracks. The network is poor while maintenance is done manually, by use of hands, and is fairly far from being adequate. This often forces drivers to drive off-road in some areas to avoid bad spots. There is also no permanent staff employed to maintain the roads. However, when funds are available, casual labour is hired to do this arduous work. During the plan period, all roads will continue to be maintained. And given the fragile nature of the environment in Sibiloi National Park, road construction and maintenance will be done using manual labour to minimise impacts on cultural resources.

Action 2.5: Maintain and construct airstrips in strategic locations

Sibiloi National Park is currently served by several airstrips. However, not all of these are currently operational or in a good state of repair. Additional or upgraded airstrips are needed in some parts of the area to ensure effective security coverage and to enhance visitor use. The only paved airstrips where regular commercial aircrafts fly are at Loiyangalani, Kalokol and Lodwar. These are quite some distance from either side of the parks. Consequently, when travelling to these parks, visitors have to complete their journey by road, boat or both. The poor state of road network in the area acts as a major deterrent to any potential visitor to the parks. There is therefore a need to develop airstrip facilities within the parks especially in Sibiloi National Park. In the past few years, the park has developed unpaved airstrips at Alia Bay and Koobi Fora. There are also two other unpaved airstrips close to Sibiloi National Park at Illeret and Shine. Whereas Alia Bay, Koobi Fora and Illeret are currently serviceable and are regularly used, the Shine one is not.

To provide easy access to the parks, KWS will liaise with other relevant institutions, including the Kenya Civil Aviation Authority (KCAA) to develop and maintain landing airstrips in Sibiloi and South Island National Parks. In this regard, Alia Bay, Koobi Fora Museum, Mile 6 Koobi Fora, Kokai and South Island airstrips will be upgraded to KCAA standards to ensure that they can accommodate anticipated increases in use during the lifespan of this management plan. New airstrips will also be developed with the aim of enhancing national park management including facilitating deployment of rangers and evacuation of staff or tourists during emergencies.

Objective 3: Vehicle, plant machinery and equipment provided and maintained

The enormous size of Sibiloi National Park often necessitates a significant amount of staff travel within the area. It involves going through a harsh and remote terrain, putting a heavy burden on the vehicles available. In most cases, priority allocation is given to security operations. Currently there is severe shortage of vehicles for smooth running of operations in the parks. The situation has been worsened by the need to travel to Kalokol, then Lodwar as well as Marsabit for administrative matters. The travel to Lodwar necessitates the use of a boat with a round trip travel of 60 kilometres from Alia Bay to Kalokol across Lake Turkana. The travel from Kalokol to Lodwar is 55 kilometres one way. Travel to Marsabit from Sibiloi is a distance of 450 kilometres, a journey that takes about 12 hours one way. In addition, drinking water is accessed from Jarigole springs, a distance of 10 kilometres from Alia Bay and has to

be supplied by water bowser. To address the aforementioned issues the following management actions will be implemented:

Action 3.1: Procure vehicles, plant and machinery

Sibiloi management will liaise with KWS regarding the procurement of new vehicles namely a tipper lorry for road maintenance work, two, four-wheel drive station wagon vehicles for use by visitors, one lorry for ferrying rations and other materials, two, four-wheel drive vehicles for operations, two, four-wheel drive vehicles for community work and two, four-wheel drive vehicles for administration and a water bowser for fetching water for the animals and staff. Moreover, the procurement of two motorized boats, one for patrol and another for ferrying visitors and for hire, will be necessary for the park operations.

The other major equipment shortage hampering the effectiveness of Sibiloi National Park management is lack of essential plant and machinery. Currently, Sibiloi National Park has a generator, windmill and water desalination plants that are not operational. These pieces of equipment need major repair. Further, there is need to sink a borehole that is solar powered in order to pump fresh water for drinking and domestic use. All these vehicles, plant and machinery will require regular service and maintenance. Hence, there will be need to expand and equip the existing workshop and deploy competent staff to man the workshop.

Action 3.2: Procure and maintain office and telecommunication equipment

There is need to procure office equipment to facilitate administrative activities. The equipment to be procured includes three desktop computers, three laptops, a heavy duty printer and photocopying machine. Further, the appropriate office furniture needs to be procured. Telecommunication equipment is very important in Sibiloi National Park Area. There is no telephone signal hence the protected area relies heavily on radio communication and Very Small Aperture Terminal (VSAT) communication to the outside world. Telecommunication equipment will be procured and maintained to boost the communication network.

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Objective 4: Wildlife, habitat and visitor security enhanced

Livestock influx from neighbouring communities into Sibiloi National Park and illegal fishing at protected parts of Lake Turkana are the major wildlife offences in the LTNPs. The livestock problem has been seasonal in nature but as livestock numbers have been increasing in recent years due to persistent drought, the situation has been worsening. The problem is further aggravated by overstocking by some of the livestock keepers who have to graze large herds of livestock in the park since the land outside does not have adequate forage. To address these law enforcement related problems the following actions will be implemented.

Action 4.1: Intensify security patrols both inside and outside the parks

KWS has been combating livestock incursion into Sibiloi National Park every year. Livestock patrols and driving livestock out of the park account for 67% of Wildlife Protection Department's activities.

Effective vehicle patrols are currently hindered by lack of adequate transport. The Sibiloi platoon has only one old Land cruiser which is unreliable. For efficient and effective patrols the platoon requires two serviceable four wheel drive vehicles. KWS will also equip its security personnel to effectively deal with livestock incursions. Operation teams will be supported by intensive aerial patrols to ascertain the distribution of livestock as a basis for deployment of ground patrols. Aerial patrols will be conducted monthly to monitor distribution of wildlife and livestock, and detect any illegal activities. In addition, KWS will organise and facilitate quarterly joint patrols with the local Kenya Police Service to deter livestock influx into the park. And to achieve this, a budget line for joint patrols will be included in the Sibiloi National Park's annual budget.

Action 4.2: Identify and map poaching hotspots in the LTNPs in collaboration with other stakeholders

The aim of identifying and mapping poaching hotspots is to better understand the spatial distribution and trends of wildlife poaching. This will help KWS to plan and respond better to poaching incidences. Hence, information on poaching hotspots will be solicited from stakeholders through information sharing meetings. Thereafter, this information will be ground-truthed through field surveys to establish poaching hotspots within and outside the Lake Turkana National Parks.

Action 4.3: Establish patrol outposts

Security to communities, workers, visitors and researchers within and around the parks is very paramount. The area to the North of Sibiloi National Park is inhabited by the Dasanach community. To the East and South-east the area is occupied by the Gabra and Turkana communities respectively. The Dasanach and Gabra are predominantly nomadic pastoralists who depend on livestock as their main source of livelihood. The Turkana depend on both nomadic pastoralism and fishing as their main sources of livelihood. Water from Lake Turkana and pastures along its shores are resources shared by all these communities. During the dry season, these resources, especially water and pasture, are normally in short supply leading to conflicts and skirmishes among the different communities. Cattle rustling is also very common in the area and often leads to skirmishes as most of herders possess illegal firearms. Visitors, researchers, and other workers within the Park may be injured if they are unfortunately caught in the crossfire of these skirmishes. There is therefore need for their security to be guaranteed. Towards this, during this plan period, a patrol base will be built at the northern park boundary around Kokai area. This base will be used for, revenue collection, monitoring cattle encroachment into the Park, and providing security escorts to visitors. Another patrol outpost will be established at camp Turkana to enhance patrols and communication. A communication centre will be established at camp Turkana to coordinate security operations with Park HQs and to keep Turkana herders out of the Park. All the patrol bases will be provided with essential equipment such as binoculars, GPS and a vehicle, to facilitate ground patrols. Further, KWS will continue to operate temporary security outposts in Central Island and South Island National Parks to control illegal fishing in the two parks.

Action 4.4: Train rangers in conservation of archaeological sites

Sibiloi National park is one of the most important protected areas because of the archaeological and paleontological discoveries which were and still are being done within the protected area. It is out of this that the term "cradle of man-kind" was coined hence the branding of the park 'the cradle of man-kind'. Archaeological artefacts are therefore not only major attractions in the park but also major areas of concern to the management as most visitors ei-

ther knowingly or unknowingly pick the same without knowing the legality and consequences involved in collecting such government trophies.

The current ranger force is not trained on the conservation of the archaeological sites hence this could limit their capacity to effectively discharge their mandate in conserving these very important sites.

Hence, NMK will train rangers on conservation of archaeological sites as this will not only ensure maximum protection of the sites but also equip rangers with archaeological knowledge and making them appreciate the value and need to conserve these sites.

Action 4.5: Enhance patrols at the identified archaeological sites

Currently the archaeological sites are not properly patrolled due to low ranger force and this has somehow compromised the security of the artefacts. Some of the trophies (artefacts) have been stolen by visitors and the communities, especially the herders, who do not understand the value of conserving the same. In addition there have been cases of fossil destruction in areas with intensive grazing.

To ensure maximum protection of these sites, regular foot, vehicle patrols will be carried out. This will be complemented by aerial patrols.

Action 4.6: Enhance visitor safety and security

One of the main functions of the security division is to ensure that the security of visitors and that of the KWS property is not compromised. Though there are no reported cases of visitor attack and loss of service property the vastness of the Sibiloi National park and its proximity to communities with heavy presence of illegal firearms presents KWS with special challenges in ensuring the safety of its staff, visitors and assets. In addition the surrounding communities (pastoralists) normally graze their livestock in the protected area and this sometimes cause conflicts among the communities.

To strengthen security, therefore, linkages will be created with relevant agencies in the tourism industry so that park management can be informed of the expected visitations and consequently advise on security matters. This would also ensure strategic visitor surveillance while enroute to LTNPs and by extension reduce risk to the tourists while travelling to the protected areas. Once the visitors are in the parks, it is prudent they be informed of park rules and regulations for their safety.

Efficient communication mechanism between LTNPs security section/management and tourist accommodation facilities and the tour operators while on game drives is essential for maintenance of high state of security throughout the area. Currently communication is a challenge as telecommunication networks for all the mobile telephone companies is lacking. Sibiloi National Park already has satellite phones but these have not been effective in solving communication challenges as they depend on satellite hence cannot operate inside the offices. In order to further strengthen communication mechanisms, a common radio frequency will be established between tour operators, tourist facilities and LTNPs security staff to enable a rapid response to any issues that arise. To supplement this, a 24-hour hotline number will also be established at all the three Park Headquarters (Alia Bay, Loiyangalani and Kalokol) to ensure that communication is possible at all times.

Action 4.7: Enhance collaboration with other security agencies to enhance security in the area

Collaboration with other security agencies is imperative especially because of the numerous security challenges in the area. Such collaborations currently exist but there is need for improvement as engagement is too casual and mostly ad hoc. Well structured collaborations should be done through joint security meetings and patrols. Participation in County and Sub-County Security Intelligence Committee meetings will also provide forums for sharing security information and possibly averting would be consequences at the right time. The respective wardens and the intelligence unit to be established (through action 4.8 below) must be actively involved in the security intelligence meetings.

Action 4.8: Establish an intelligence unit for LTNPs

The KWS Intelligence has a very high standard and competency for collecting intelligence in the field, and it provides important advance warning for many attempted intrusions. However, LTNPs has no intelligence system of its own. It has been relying on Marsabit CLIC and they have not developed any mechanism of gathering wildlife and tourist intelligence in the area. To facilitate their operations, the Intelligence Unit will establish and equip a cell at Sibiloi to cover the LTNPs, Mt. Kulal, Loiyangalani, Kalokol and Illeret areas. The team will create its own network of informants and increase community involvement in gathering wildlife intelligence information.

Plan Monitoring

The plan monitoring framework set out in the following tables has been designed to provide guidance for the assessment of the potential impacts resulting from the implementation of each of the five management programmes. The framework sets out the desired positive impact of each programme's objectives as well as any potential negative impacts that may possibly occur. The framework also includes easily measurable and quantifiable indicators for assessing these impacts, and potential sources of the information needed. Monitoring the impacts of the plan implementation is a key aspect of the ultimate success of the plan and for informing adaptive management of the area, and as such ensuring that overall benefits from plan implementation are maximised, and that any negative impacts are appropriately mitigated.

Table 8: Ecological Management Programme Monitoring Plan

Objective or Sub-Objective	*Potential Impacts (Positive and Negative)*	*Verifiable Indicator*	*Sources and means of verification*
Objective 2: Important habitats managed and monitored	**The area of lacustrine grassland available for key herbivores for grazing and water birds for breeding is maintained or increased**	**Area of lacustrine grassland**	**Satellite imagery and ground observations**
	Crocodile breeding areas are protected	**Population size and recruitment rates**	**Population counts**
	Fish population is increasing	**Population size**	**Fish landed**
	Supply of water to Lake Turkana is increasing	**Water quantity and quality reaching the lake**	**Water flow and quality analysis**
Objective 2: Conservation status of species of conservation concern enhanced	**The LTNPs Grevy's zebra population is increasing at optimal rates**	**Population size and recruitment rates**	**Population counts and Collaring of individuals**
	Large carnivore populations are maintained	**Population size and recruitment rates**	**Population counts**
Objective 3: LTNPs ecological dynamics monitored and understood	**Science driven management supported by sound research information**	**Science based management decisions**	**Management reports**

Table 9: Prehistoric and Cultural Heritage Management Programme Monitoring Plan

Objective	*Potential Impacts (Positive and Negative)*	*Verifiable Indicator*	*Sources and means of verification*
Objective 1: Conservation of cultural resources enhanced	**Increased protection of prehistoric and cultural resources**	**Incidents of livestock incursion into SNP**	**LTNPs Security Section records (incident reports)**
Objective 2: Cultural resource management capacity strengthened	**There are adequate resources to support cultural resource management**	**Visitor satisfaction index**	**Visitor satisfaction surveys**

Objective 3: Prehistoric and cultural related research promoted	**Knowledge on prehistory and culture is increasing**	**Published scientific reports**	**NMK management reports**

Table 10: Tourism Development and Management Programme Monitoring Plan

Objective	*Potential Impacts (Positive and Negative)*	*Verifiable Indicator*	*Sources and means of verification*
Objective 1: Tourism products diversified to support different market segments	**Increased revenue**	**Number of visitors**	**KWS HQ visitor database and concession holder records**
	Increased length of stay in the LTNPs	**Average number of nights spent in the LTNPs per visitor**	**Concession holder records and bed night fees**
	Visitor security incidents as a result of using remote parts of the LTNPs	**Number of visitor safety and security incidents in LUZ and WZ**	**Incident reports**
	Environmental degradation from increased visitor numbers and new tourist activities and/or supporting infrastructure	**Evidence of pollution/litter or habitat degradation at sites where activities or infrastructure are located**	**Targeted inspections by LTNPs staff**
Objective 2: Tourism facilities developed and maintained	**Increased number of visitors to the LTNPs**	**Annual visitor numbers**	**KWS HQ visitor database**
	Improved financial sustainability of the LTNPs	**Annual revenue**	**LTNPs Finance Dept records**
	New developments impact on the LTNPs wilderness characteristics	**LTNPs visitor and investor satisfaction**	**Feedback from LTNPs investors**
Objective 3: Tourism management and administration systems strengthened	**Increased collaboration between KWS and LTNPs investors**	**Number and participation at tourism investor and LTNPs management meetings**	**Meeting minutes**
Objective 4: LTNPs Conservation area promoted and marketed as a unique tourism destination	**Improved visitor understanding of the LTNPs ERVs, conservation issues and history**	**Number of guidebooks and maps sold**	**KWS HQ tourism records**
	The LTNPs wilderness and environmental qualities are compromised around attractions	**Evidence of litter and environmental damage at LTNPs attractions**	**Targeted inspections by LTNPs staff**

Table 11: Community Partnership and Conservation Education Programme Monitoring Plan

Objective	*Potential Impacts (Positive and Negative)*	*Verifiable Indicator*	*Sources and means of verification*
Objective 1: LTNPs-community communication and collaboration mechanisms established and strengthened	Enhanced relationships between LTNPs management and surrounding communities	Incidences of LTNPs - community conflict	Community Wildlife Service records
Objective 2: Community benefits from the LTNPS improved	Increased value and importance of the LTNPs to surrounding communities	Income from activities linked to the conservation of the LTNPs	Community organisation records
Objective 3: Understanding and awareness of LTNPs conservation importance improved	Improved understanding of the LTNPs conservation importance	Number of participants in sensitization workshops	Community Wildlife Service records
	Increased community awareness of and respect for LTNPs rules and regulations	Number of local community members arrested for illegal activities in the LTNPs	Security Section Records
	Reduced illegal natural resource use in the LTNPs	Number of local community members arrested for illegal natural resource use in LTNPs	Security Section Records
Objective 4: Human - wildlife conflict reduced	Reduced costs of wildlife to LTNPs adjacent communities	Incidents of human-wildlife conflict around the LTNPs	Community Wildlife Service records (monthly reports and occurrence books) Compensation claims records

Table 12: Protected Area Operations and Security Management Programme Monitoring Plan

Objective or Sub-objective	*Potential Impacts (Positive and Negative)*	*Verifiable Indicator*	*Sources and means of verification*
Objective 1: Effective management systems and human resource capacity deployed	Enhanced management collaboration between KWS and NMK	Percentage of joint responsibility 3-year activity plan milestones achieved	LTNPs annual reports
	Improved efficiency of LTNPs staff undertaking their roles	Staff performance against 3-Year Activity Plan “milestones”	LTNPs annual reports
	Improved morale of LTNPs staff	Number of poor morale related incidences	LTNPs annual reports

Objective or Sub-objective	*Potential Impacts (Positive and Negative)*	*Verifiable Indicator*	*Sources and means of verification*
Objective 2: Infrastructure to support tourism, ranger operations and administration improved	**Improved visitor and management access across the LTNPs**	**Kilometres of roads improved and trails established**	**LTNPs management records and KWS HQ GIS database**
	Environmental disturbance and pollution during gate or airstrip construction	**Evidence of litter, pollution or excessive environmental damage**	**Targeted inspections by LTNPs staff**
Objective 3: Vehicle, plant machinery and equipment provided and maintained	**Improved efficiency in management operations (especially security and PAC responses)**	**Ratio of operational to non-operational vehicles**	**LTNPs management records and/or periodic surveys**
	Improved management response to security or HWC incidents	**Number of security and HWC incidences successfully responded to**	**Community surveys and investor feedback**
Objective 4: Wildlife, habitat and visitor security enhanced	**The establishment of the LTNPs as a safe and secure destination for visitors and investors**	**Number of visitor security incidents in the LTNPs**	**LTNPs Security Section records (incident reports)**
	Reduced impact of poaching and livestock incursions on LTNPs natural resources	**Size and frequency of cattle incursions into the LTNPs, and number of poaching incidents**	**LTNPs Security Section records and aerial surveys**
	Improved security situation in LTNPs adjacent areas	**Security incidents (banditry, livestock theft etc.) around the LTNPs**	**LTNPs Security Section records (incident reports)**
	Increased efficiency of law enforcement efforts	**Number of arrests made per law enforcement effort**	**LTNPs Security Section records (patrol records and monthly, quarterly and annual reports)**

Annex 1: Three Year Activity Plans (2018-2021)

The following pages set out the first 3-Year Activity Plans for the Management Programmes outlined in the plan. The activity plan details the activities, responsibilities, timeframe and extraordinary resource requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan. In addition, that plan sets out specific and timebound "milestones" that LTNPs management aims to achieve in implementing the plan.

1. Ecological Management Programme

Management Action and Activities	***Persons Responsible***	***Timeframe***												***Milestones***
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: Important habitats managed and improved														
1.1 Protect and monitor the lacustrine grasslands and sandy beaches														
1.1.1 Identify and map important lacustrine grasslands	SRS-NCA, LTNPs Wardens													• Crocodile and water bird breeding sites identified and mapped by June 2019
1.1.2 Map and mark crocodile breeding sites	SRS-NCA, LTNPs Wardens													
1.1.3 Map and mark water bird breeding sites	SRS-NCA, LTNPs Wardens													
1.2 Promote sustainable water use in Lake Turkana catchment areas														
1.2.1 Conduct a study on the impact of water extraction on Lake Turkana	SRS-NCA, LTNPs Wardens, WRMA													• Water resource study report produced by June 2020 .

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.2.2 Collaborate with WRMA to install river flow gauges	SRS-NCA, LTNPs Wardens, WRMA								■	■	■			
1.2.3 Collaborate with WRMA to train WRUAs in watershed management	SRS-NCA, LTNPs Wardens, WRMA					■	■	■	■					• Participation of KWS in watershed managemnt
1.2.4 Collaborate with WRMA to develop watershed management plans	SRS-NCA, LTNPs Wardens, WRMA									■	■	■	■	
1.3 Strengthen water quality monitoring systems on major rivers feeding Lake Turkana														
1.3.1 Purchase water quality monitoring equipment	SRS-NCA, LTNPs Wardens, H-EM							■	■					• River water pollution sources identified and mapped by June 2020
1.3.2 Train research staff in water quality monitoring	SRS-NCA,SRS-WCA, H-EM, H-HC				■	■	■							
1.3.3 Map pollution point sources	SRS-NCA,SRS-WCA, NEMA									■	■	■	■	
1.3.4 Collaborate with NEMA to enforce water quality regulations	SRS-NCA, NEMA, LTNPs wardens	■	■	■	■									
1.4 Collaborate and support reforestation programmes in Lake Turkana water catchment areas														
1.4.1 Collaborate with relevant authorities to identify and map areas that require reforestation	SRS-WCA, WRMA, LTNPs Wardens, KFS	■	■	■	■	■	■	■	■	■	■	■	■	• Participation of KWS in reforestation programmes carried out annually
1.4.2 Undertake reforestation of Turkwel river catchment area	SRS-WCA, WRMA, LTNPs wardens					■	■	■	■	■	■	■	■	
Objective 2: Conservation status of species of conservation concern enhanced														
2.1 Monitor Grevy's Zebra population														
2.1.1 Develop a monitoring program for Grevy's zebra	SRS-NCA, GZTF Warden Sibiloi	■	■	■	■									• GZ Monitoring program developed by June 2019
2.1.2 Deploy an officer to undertake surveillance	SRS-NCA, GZTF Warden Sibiloi			■	■	■								

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.2: Establish a Grevy's Zebra site committee for the LTNPs														• Local Grevy's zebra committee formed by June 2021
2.2.1 Identify relevant stakeholders to form the grevy's zebra committee	SRS-NCA, GZTF Warden Sibiloi, H-species KWS HQ				■	■	■							
2.2.2 Develop terms of reference for the committee	SRS-NCA, GZT Warden Sibiloi, H-species KWS HQ						■	■						
2.2.3 Organize biannual committee meetings	SRS-NCA, GZT Warden Sibiloi, H-species KWS HQ								■			■		
2.3 Carry out comprehensive census of Grevy's zebra population in and around the LTNPS														• Conduct 2 surveys by June of 2021
2.3.1 Conduct a reconnaissance survey to establish the population status	SRS-NCA, Warden Sibiloi, H-species KWS HQ					■			■					
2.4 Investigate feasibility of relocating Grevy's Zebra within a fenced sanctuary in Sibiloi NP														• A suitable sanctuary site identified by June 2021
2.4.1 Establish a LTNPs Grevy's zebra sanctuary	SRS-NCA, Warden Sibiloi, H-species KWS HQ, GZTF											■	■	
2.4.2 Conduct a study on reintroduction of Grevy's zebra in Sibiloi NP	SRS-NCA, Warden Sibiloi, H-species KWS HQ, GZTF											■	■	
2.5 Monitor and restore large carnivores														• Carnivore monitoring protocol developed by June 2019
2.5.1 Establish a carnivore monitoring program	SRS-NCA, Warden Sibiloi, H-species KWS HQ				■	■	■	■						
2.5.2 Conduct a study on human-hyena conflict	SRS-NCA, Warden Sibiloi, H-species KWS HQ	■	■	■	■									• Human Conflict Report produced by June 2019

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.5.3 Conduct carnivore reintroduction study	SRS-NCA, Warden Sibiloi, H-species KWS HQ													• Feasibility study report produced by June 2021
2.6 Monitor Nile Crocodiles, fish and avifauna populations														
2.6.1 Carry out Nile crocodile census	SRS-NCA &W CA, LTNPs Wardens, H-species KWS HQ, KMFRI													• Crocodile census report produced by Dec 2020
2.6.2 Liaise with KMFRI in monitoring Lake Turkana fish population	SRS-NCA & WCA, LTNPs Wardens, H-species KWS HQ, KMFRI													• Water bird census conducted biannually at selected points
2.6.3 Monitor water bird populations in LTNPs	SRS-NCA & WCA, LTNPs Wardens ,H-species KWS HQ, NMK													
Objective 3: LTNPs ecological dynamics monitored and understood														
3.1: Design and implement an ecological monitoring programme														
3.1.1 Develop a detailed ecological monitoring protocol	SRS-NCA & WCA, KMFRI, NMK													• Ecological monitoring program protocol developed and implemented by June 2020
3.1.2 Implement ecological monitoring protocol in LTNPs	SRS-NCA & WCA, KMFRI, NMK													
3.2 Establish an ecological monitoring database														
3.2.1 Create an ecological monitoring database for LTNPs	SRS-NCA & WCA, NMK, KMFRI													• Ecological data base developed by Dec 2018
3.3 Establish a wildlife research centre														
3.3.1 Construct and equip a research centre at Aliya Bay	NCA-SRS, DD-BRM													

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
3.3.2 Deploy research staff at the research centre	DD-BRM,H-HC, NCA-SRS													
3.4 Conduct wildlife censuses in Sibiloi National Park														• Baseline survey conducted by Dec 2020
3.4.1 Conduct a wildlife survey to establish baseline	NCA-SRS													
3.4.2 Conduct regular wildlife censuses	NCA-SRS													
3.4.3 Collar Grevy's zebra, common zebra and oryx to monitor movement	NCA-SRS													• Collars purchased and fitted to identified species by dec 2020
3.5 Collaborate with other researchers undertaking wildlife research in the area														• Guidelines disseminated and enforced continuously
3.5.1 Disseminate KWS research guidelines to researchers in LTNPs	NCA-SRS,WCA-SRS													
3.5.2 Enforce KWS research guidelines in LTNPs	NCA-SRS,WCA-SRS													
3.6 Collaborate with other institutions in conserving LTNPs														
3.6.1 Develop MOUs with NMK and KMFRI	NCA-SRS,WCA-SRS,LTNPs Warden, Legal Dept.													MOU developed by June 2021
3.6.2 Develop MOU with TBI	NCA-SRS, Warden-Sibiloi NP, KWS Legal Office													MOU developed by June 2021
3.7 Design and implement a climate change mitigation and adaptation programme														Climate change adaptation programme designed by June 2021
3.5.1 Design a climate change adaptation programme	NCA-SRS,WCA-SRS, KMFRI, NMK													
3.7.2 Partner with schools at Illeret, Gus, Moite, Loiyangalani, and Eliye Springs, Kalakol and CBOs to plant trees	NCA-SRS,WCA-SRS, CWs, KFS CBOs													

ABBREVIATIONS

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	

CWs - Community Wardens
DD BRM – Deputy Director Biodiversity Research and Monitoring
HHC Head Human Capital
NCA - Northern Conservation Area
NMK – National Museums of Kenya
SRS - Senior Research Scientist
WCA - Western Conservation Area
GZTF – Grevy's Zebra Task Force
HEM – Head Ecological Monitoring
KFS – Kenya Forest Service
NEMA – National Environment Management Authority
NP – National Park
TBI – Turkana Basin Initiative
WRMA – Water Resources Management Authority

2. Prehistoric and Cultural Heritage Management Programme

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: Conservation of cultural heritage resources enhanced														
1.1 Create awareness among local communities on the importance of cultural heritage sites														
1.1.1 Organize cultural talks in schools, trading centres	NMK, TBI													Cultural awareness talks held in key target area in Illeret, Loiyangalani and North Horr.
1.1.2 Create awareness among the local communities through public meetings	NMK, TBI													
1.1.3 Establish and maintain interpretive signage at the park entrance and at prehistoric sites	NMK exhibit Departments & KWS													Interpretive signage established in 3 Park entrance points (Kokai, Karare and Karsa)by Dec 2020
1.2 Provide alternative sources of livelihood for the local community														Hold consultative stakeholders forum on potential livelihood programs initiatives Dec 2019
1.2.1 Identify potential areas for intervention and disseminate this information to stakeholders.	NMK, KWS, TBI													
1.2.2 Work with the local community to help it in unveiling heritage-branded merchandise	NMK, KWS, TBI													• One integrated merchandize shop developed by 2020
1.2.3 Develop a facility to sell their merchandize to tourists	NMK,KWS,TBI													
1.2.4 Train local community on entrepreneurial skills	NMK,KWS,TBI													• Entrepreneur skills impacted to communities by mid 2019
1.3 Support establishment of a viable grazing management system														
1.3.1.Organize sensitization meetings to address the livestock incursion problem in the SNP	KWS,NMK,TBI													• Hold regular consultative meetings

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.3.2 Participate in established grazing committees	NMK,KWS,TBI													• NMK is participating in community grazing committees
1.4 Maintain and secure major prehistoric sites														• Secure all prehistoric sites by Dec 2020 • Guidelines on infrastructure development developed by Dec 2020
1.4.1 Intensify patrol around the prehistoric sites	KWS, TBI,NMK													
1.4.2 Develop guidelines on the infrastructure development	NMK,KWS													
1.4.3 Maintain and secure shelters to ensure that the security of prehistoric sites	NMK													
1.5 Install and maintain interpretive signage														
1.5.1 Install interpretive signage at fossil sites and at major road junctions	KWS,NMK- Exhibits													Develop materials and install signages by Dec 2019
1.5.2 Develop information for display from published research papers about the specimen	NMK-Earth Sciences and Exhibits department													
1.5.3 Install important replica casts of key fossils discovered in LTNPS	NMK-Earth Sciences & Exhibits Departments													Replica casts developed and installed by Dec 2019
Objective 2: Cultural resource management capacity strengthened														
2:1 Develop guidelines for infrastructure development and maintenance to preserve prehistoric resources														
2.1.1 Liaise with the KWS Warden at Sibiloi NP to ensure that the above infrastructure development guidelines are strictly adhered to	NMK- Curator													Infrastructure guidelines implemented continuously
2.2 Strengthen community participation in conservation of cultural heritage resources														
2.2.1 Facilitate/ support the cultural groups in showcasing their	TBI, CGT, CGM,													• Cultural centre es-

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
cultural activities	NMK, KWS													tablished by June 2019
2.2.2 Establish a cultural centre	TBI, CGT, CGM, KWS, NMK													
2.2.3 Provide internship opportunities to youth from the local communities	NMK, TBI, KWS													
2.2.4 Promote community participation in research activities	NMK, KWS, TBI													
2.2.5 Source for funding to support capacity building	KWS, NMK													Joint funding proposals formulated annually
2.3 Rehabilitate and maintain facilities at Koobi Fora														• Accommodation facilities rehabilitated by end of 2019 • Clean water supplied by end of 2020
2.3.1 Rehabilitate and maintain accommodation facilities at Koobi Fora Camp	NMK													
2.3.2 Supply clean water to bandas at the Koobi Fora Museum as well as the staff mess area and staff accommodation bandas	NMK													
2.4 Refurbish the museum gallery and teaching lab at Koobi For a														
2.4.1 Renovate the site museum with new, appealing images and specimens	NMK- Exhibits Dept.													Museum branded by June 2021
2.4.2 Exhibit ethnographic material from the local communities	NMK- Exhibits Dept.													Local exhibits prepared for exhibition by june 2021
2.5 Provide adequate transport														4 WD vehicle procured and maintained
2.5.1 Procure and maintain a 4WD for Koobi Fora base camp	NMK, KWS													
2:5.2 Service boat regularly	NMK													
2.5.3 Hire a qualified coxswain	NMK													Coxswain engaged by Dec 2019
2.5.4 Hire qualified mechanic based at base camp	NMK													Mechanic engaged by Dec 2019

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 3: Prehistoric and cultural related research promoted														
3.1 Establish a research database at Koobi Fora														Research centre developed and equipped by June 2021
3.1.1 Develop a functional and sustainable resource centre to support research in LTNPs.	NMK													
3.1.2 Map, zone prehistoric sites and identify allowable activities for each zone	NMK-Earth Sciences													Prehistoric sites mapped and activity guidelines drafted by dec 2019
3.2 Promote community participation in research activities														• Annual research forum held to disseminate research findings • 3 community members trained in Palaeo science by june 2019
3.2.1 Share research findings with local community	NMK,TBI													
3.2.2 Promote and enhance training of community members in palaeo-science	NMK,TBI													
3.3 Publish and disseminate research findings targeting local communities														• Extension conservation awareness and education materials developed by Dec 2020
3.3.1 Develop and share with the community publicity media tools such as posters, booklets, video and flyers	NMK, TBI, KWS													
3.3.2 Distribute published media tools to the communities	NMK, TBI, KWS													
3.3.3 Organize information campaigns by researchers	NMK, TBI, KWS													

ABBREVIATIONS

CGM – County Government of Marsabit
NMK – National Museums of Kenya
CGT – County Government of Turkana
NP – National Park

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	

TBI – Turkana Basin Initiative

3. Tourism Development and Management Programme

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: The tourism product diversified and improved to attract different market segments														
1.1 Improve water based recreational activities														
1.1.1 Introduce larger and quality boats	WT, LTNPs Warden													Acquire specified safe boats for hiring by 2021
1.1.2 Procure boats for ex-cursions	WT, LTNPs Warden													
1.2 Develop observation points and hides														
1.2.1 Construct observation points at Alia Bay and Campi Turkana	WT, LTNPs Warden													Two observation points developed and availed for visitor use by June 2019
1.3 Introduce night game drives and camel safaris														
1.3.1 Introduce night game drive on a pilot basis for one year	WT, LTNPs Warden													Night game drives introduced by June 2019

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.3.2 Identify and map camel safari routes	Warden SNP													Camel safari route identified by Dec 2018
1.4 Improve the existing nature and walking trails and develop new ones														
1.4.1 Introduce new trails and short-walks around croco-dile and petrified forest	WT, Warden SNP													Establish archaeological circuits identified and mapped by Dec 2018
1.5 Establish sport fishing and boat safaris														
1.5.1 Develop marketing strategy for sport fishing	WT, LTNPs wardens													Sport fishing marketed continuously and sport fishing code prepared and dissemi-nated by Dec 2019
1.5.2 Develop sport fishing code	WT, LTNPs wardens													
1.5.3 Identify boat safari routes with scenic features	WT, LTNPs wardens													
1.6 Provide tour guiding services														
1.6.1.Establish functional community tour guide associa-tion at Illeret, Kalakol, and Loiyangalani	LTNPs war-dens													3 community guide associations established For LTNPs by June 2021

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.6.2 Identify and train local community tour guides	LTNPs wardens													
1.6.3 Develop operational tour guide guidelines	LTNPs wardens													
Objective 2: Tourism facilities developed and maintained														
2.1 Establish eco-lodges														Ecolodge and eco-banda sites identified by Dec 2018
2.1.1Identify suitable sites for eco-lodges and bandas	LTNPs wardens/MBD													
2.1.2 Develop prospectus to be distributed to potential investors	LTNPs wardens/MBD													• Prospectus distributed to investors and sites awarded by September 2019
2.1.3 Advertise and award sites to investors	LTNPs wardens/MBD													
2.2 Develop visitor information centres and displays at key entry points														• One information centre and gift shop constructed at Alia Bay by June 2021
2.2.1 Construct visitor information centre and gift shop	LTNPs wardens													
2.2.2 Equip visitor information centre and gift shop	LTNPs wardens													

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.3 Develop a desert museum														
2.3.1 Develop a funding proposal for a desert Museum	Warden SNP													
2.3.2 Construct and equip the desert Museum	Warden SNP, MBD													
2.3.3 Deploy trained staff to manage the museum	Warden SNP, H-HC													
2.4 Establish an aquarium and fisheries museum														
2.4.1 Develop an aquarium and fisheries museum at Kokai	Warden SNP													
2.4.2 Collect and package marine data for interpretation	LTNPs Wardens, KMFRI & SRS-NCA													
2.5 Develop *bandas* and a new guesthouse, and maintain existing one														
2.5.1 Identify new sites for *bandas* and new guesthouse development	LTNPs Wardens & SRS-NCA													Maintain Aliya Guest House continuously Banda and new guest house developed by June 2021
2.5.2 Develop the *bandas* and new guesthouse	LTNPs Wardens, DDT , MBD													
2.6 Establish new campsites and maintain existing ones														

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.6.1 Identify sites for public and special campsites	LTNPs Wardens & SRS-NCA													
2.6.2 Develop public campsites	LTNPs Wardens													
Objective 3: Tourism management and administration systems strengthened														
3.1 Harmonise KWS and NMK visitor accommodation and services tariffs														Harmonised tariffs implemented by June 2020
3.1.1 Develop KWS and NMK harmonised tariffs for researchers and visitors	LTNPs Wardens & MBD													
3.2 Carry out regular inspections of the LTNPs tourism facilities														Environmental audits conducted annually
3.2.1 Develop tourism monitoring programme	LTNPs Wardens & SRS-NCA													
3.2.2 Carry out nnual environental audits	LTNPs Wardens & SRS-NCA													
3.3 Carry out regular visitor satisfaction surveys														Visitor survey conducted and report produced by Dec 2020 Stakeholders forum held and findings discussed
3.3.1 Undertake a baseline visitor satisfaction survey	LTNPs Wardens & SRS-NCA													
3.3.2 Undertake annual visitor satisfaction survey	LTNPs Wardens & SRS-NCA													

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
3.3.3 Disseminate the survey findings to tourism stakeholders	LTNPs Wardens & SRS-NCA													
3.4 Improve communication and collaboration with LTNPs tourism stakeholders														
3.4.1 Identify ey tourism akeholders in TNPs	LTNPs Wardens													
3.4.2 Organise quarterly LTNPs tourism stakeholders consultative meetings	LTNPs Wardens													Hold Quarterly tourism stakeholders consultative meetings
3.4.3 Establish a tourism management and implementation committee	LTNPs Wardens													
3.5 Avail tourist vehicles and boats for hire by tourists														
3.5.1 Procure a four wheel drive vehicle for visitor hire in LTNPs	LTNPs Wardens, DG													
3.5.2 Procure a modern motor boat for visitor for hire	LTNPs Wardens, DG													
3. 6 Implement measures to enhance revenue collection														

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
3.6.1 Post KWS staff to Kobi Fora to be in charge of revenue collection	LTNPs Wardens & H-HC													Request NMK for accommodation KWS Staff by June 2019.
3.6.2 Construct extra revenue collection gates	LTNPs Wardens													Functional entry gates established at Kobi Fora, Eliye springs, Loiyangalani by June 2020
3.6.3 Post KWS customer care staff to the gates	LTNPs Wardens & H-HC													
3.6.4 Conduct regular ticket inspections	LTNPs Wardens													Ticket inspection conducted continuously
3.7 Liaise with HQ for introduction of an improved revenue collection system														
3.7.1 Fast track the introduction of new improved revenue collection system	LTNPs Wardens													
3.7.2 Train the staff on the new system	LTNPs Wardens													
3.8 Establish a system for providing ranger guide escorts for walking safaris and research activities														
3.8.1 Train rangers on guiding services	LTNPs Wardens													10 Rangers trained (2 CINP, 2 SINP, 6 SNP) by June 2021

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
3.8.2 Establish a centralised booking system for guiding services	LTNPs Wardens													System established and adapted by field managers by June 2021
3.8.3 Develop a ranger guide/escort requisition protocol	LTNPs Wardens													Ranger guide protocol adopted by June 2020
3.9 Develop a LTNPs visitor code														
3.9.1 Develop visitor rules and regulations specific to LTNPs	LTNPs Wardens													Rules and regulations guidelines developed and produced by June 2019
3.9.2 Distribute the rules and regulations at all gates	LTNPs Wardens													Guidelines distributed to stakeholders by Dec 2019
Objective 4. LTNPs promoted and marketed as a unique tourism destination														
4.1 Develop a tourism marketing strategy for LTNPs														
4.1.1 Develop and implement marketing strategy	LTNPs Wardens, MBD													Marketing Strategy prepared by Dec 2019
4.1.2 Establish partnership with tourism stakeholders for marketing LTNPs	LTNPs Wardens, MBD													Tourism stakeholders' engaged and a forum established by Dec 2019

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.1.3 Re- brand LTNPs	LTNPs Wardens, MBD													Branding done for the three Parks by end of 2021
4.2 Develop and disseminate promotional brochures and interpretative materials														
4.2.1 Design and produce promotional marketing collaterals	LTNPs Wardens, MBD													New marketing materials designed, produced and disseminated by June 2020
4.3 Prepare a documentary on the tourism potential of the area														
4.3.1 Develop a proposal for documentary production	LTNPs Wardens, MBD													Proposal drafted for production by Dec 2018
4.3.2 Identify and engage reputable documentary producers	LTNPs Wardens, MBD													Procurement for documentary producers done by Feb 2019
4.3.3 Market the LNTPs through the documentary	LTNPs Wardens, MBD													Initiate LTNPs marketing campaigns by July 2019
4.4 Promote regular tour package air flights to the area														
4.4.1 Upgrade existing airstrip	LTNPs Wardens													Two airstrips rehabilitated (Alia bay and Kobi fora) by June 2019
4.4.2 Promote tourism to LTNPs by use chartered planes	LTNPs Wardens, MBD KWS Legal office													Engage chartered plane companies by June 2019
4.5 Develop and maintain a website on the LTNPs and its environs														

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.5.1 Identify a qualified web-site developer	LTNPs Wardens, MBD													Website developer engaged by June 2020
4.5.2 Develop the website for LTNPs and link it to the main KWS website	LTNPs Wardens, MBD													Website developed and linked to KWS one by Dec 2020
4.6 Market LTNPs through organized events														
4.6.1 Develop a database of calendar of major events within LTNPs	LTNPs Wardens													Calendar of tourism related events developed by Dec 2018
4.6.2 Organize tourism marketing events in collaboration with tourism stakeholders within LTNPs	LTNPs Wardens, BDM													Tourism marketing events by June 2019

ABBREVIATIONS

BDM - Business Development Manager
KATO - Kenya Association of Tour Operators
MM - Marketing Manager
NCA - Northern Conservation Area
SNP – Sibiloi National Park
HHC - Head Human Capital
MBD - Marketing and Business Development
SO - Security Officer
SRS – Senior Research Scientist
WT - Warden Tourism

4. Community Partnership & Education Programme

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: LTNPs-community communication and collaboration mechanisms established and strengthened														
1.1 Strengthen and support activities of existing community groups around the protected areas														At least 5 community groups facilitated and supported by the end of 2021
1.1.1 Hold regular meetings with community group leaders on group management.	CWS, Warden in-charge													
1.1.2 Conduct regular capacity building sessions to the groups	CWS, Warden in-charge													
1.1.3 Organise exchange visits to successful existing community groups elsewhere	Warden in-charge													One exchange visit done by Dec 2020
1.2 Establish and strengthen game scouts														
1.2.1 Identify and support the formation of game scouts in potential conservancy areas	CWS, Warden in-charge													By the end of 2021, all the three PA's should have trained community scouts
1.2.3 Liaise with KWS headquarters to train community scouts paramilitary course	Warden in-charge													Community scouts trained at by June 2021
1.3 Promote and support the establishment of Natural Resource Management Teams														
1.3.1. Revive already existing natural resource management teams in the PA	TBI Program coordinator, CWS,NRT, FoLT													5 NRM teams created within the PA's in the three year period
1.3.3 Establish grazing committees	CWS, TBI, NRT													Committee established by June 2019
1.4 Collaborate with government and local non-governmental organisations														
1.4.1 conduct an inventory for all the NGOS and CBOs within the area with interest in conservation	CWS- Warden													At least two meetings per quarter with CGM &

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.4.2: Conduct meetings with the NGOs	Warden in-charge													CGT and non-governmental organizations Attend all security meetings
1.4.3 Attend all the Sub county and County security and intelligence meetings	Warden in-charge													
1.5 Nominate, gazette honorary wardens and work together to sensitize the local community on conservation														
1.5.1 Identify suitable candidates	Warden in-charge													At least one honorary warden is nominated from each community neighbouring the PA's
1.5.2 Nominate and recommend their appointment	Warden in-charge													
1.5.3 Develop and implement joint work plans with honorary wardens	Warden in-charge													Work plan developed
Objective 2: Community benefits from the LTNPs improved														
2.1 Implement and support new and ongoing community development projects														
2.1.1 Facilitate community groups to create cultural Bomas	Warden in-charge, CWS													Establish/support at least one community project for each FY
2.1.2 Facilitate the communities to access alternative water sources outside the Park	Warden in-charge, CWS													
2.2 Enhance employment opportunities for local community members														
2.2.1 Prioritise community members for both skilled and non-skilled jobs	Warden in-charge													-Train BMU's at least once a year in each PA -Ensure community members are employed when opportunities arise
2.2.2 Prioritise the communities within the LTNPS when awarding contracts	Warden in-charge													
2.2.3 Capacity build Beach management units on boat building and management	FoLT, Warden in-charge, Fisheries department													Support 20 BMUs around LTNPs by end of 2021 (10 in Turkana county and 10 Marsabit county)
2.3 Support establishment of community conservation enterprises and alternative sources of livelihood														

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.3.1 Support the establishment of community game farming to provide employment	Warden in-charge, SRS's													
2.3.2 Assist the communities acquire the requisite documents for wildlife utilization	Warden in-charge													
2.3.3 Assist in the establishment of eco lodges within the communities	Warden in-charge, CWS													Facilitated at least 5 community enterprise project by the end of the 3 years
2.3.4 Assist in the development of cultural Bomas as income generating activities around the influence zones	Warden in-charge, CWS													
2.3.5 Assist the communities in acquiring boats to assist them in water based tourism activities	Warden in-charge, CWS													
2.4 Support establishment of community wildlife conservancies around LTNPs														
2.4.1 Conduct awareness meetings on the importance of conservancies to buy support from communities	Warden in-charge													Conservation extension awareness campaigns done
2.4.2 Identify suitable areas for establishment of community wildlife conservancies in collaboration with relevant authorities	CGM, Community, warden, SRSs													At least one conservancy established near each PA
2.4.3 Support the community make the required applications to establish the conservancies	Warden in-charge, SRS\ NCA,NRT													5 Community groups supported
2.4.4 Support establishment of conservancies in collaboration with the respective county governments (currently the County Government of Marsabit has established 2 conservancies in Derate and Buluk)	CWS, warden in-charge													5 conservancies be proposed/established by end of 2021
Objective 3: Understanding and awareness of LTNPs conservation improved														
3.1 Establish and equip education facilities in LTNPs and environs														
3.1.1 Construct education centres in the LTNPs	Warden in-charge, DG, Donor													One educational centre constructed and equipped in each PA
3.1.2 Purchase and equip the centres with educational materials	Warden in-charge, DG, Donor													

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
3.2: Establish a cultural and natural heritage outreach programme as part of local education curriculum														
3.2.1 Liaise with the ministry of education to develop an education curriculum that embraces local culture	Wardens LTNPs, AD- Education KWS													Curriculum developed and implemented
3.2.2 Develop the culture enriched education curriculum	Wardens LTNPs, AD- Education KWS, TBI, NMK													
3.2.3 Implement the curriculum in LTNPs schools	Wardens LTNPs, AD- Education KWS, TBI, NMK													
3.3 Raise general awareness of the LTNPs conservation importance and values														
3.3.1 Conduct regular visitation to schools, villages, organized groups	Wardens LTNPs, TBI, NMK, FoLT													Visitations and meetings held
3.3.2 Use local media in conservation awareness creation	Wardens LTNPs, TBI, NMK, FoLT													
3.3.3 Conduct conservation awareness campaigns during annual events	Wardens LTNPs, TBI, NMK, FoLT													Awareness created
Objective 4: Human-wildlife conflict reduced														
4.1 Train community game scouts and other volunteers on HWC mitigation measures														
4.1.1 Train community scouts on wildlife behaviour and trap management	Wardens LTNPs													10 trainings conducted
4.1.2 Create of human wildlife conflict resolution committees in hotspots	Wardens LTNPs													10 resolution committees enacted (3, in CINP 3 in SINP, 4 SNP)
4.2 Create awareness on human wildlife conflicts														
4.2.1 Conduct regular sensitization meetings on human wildlife conflict reduction (Snakes)	Wardens LTNPs, TBI, NMK, FoLT													Meetings conducted A CSR project developed on Snake management and farming
4.2.2 Map out the past and the recent conflict hotspots areas	Wardens LTNPs, TBI, SRS-NCA, WCA													Report produced

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.3 Provide support to enhance the compensation claim process														
4.3.1 Lobby the county governments of Marsabit and Turkana to set up consolation funds for death and injury cases	Warden in-charge, chairman CWCC													-At least 75% of duly filled compensation claims are processed
4.3.2 Sensitize the communities and their leaders on compensation processes and procedures	Wardens LTNPs, TBI, NMK, FoLT													
4.3.3 Lobby through political leaders for quick disbursement of compensation funds	Warden in-charge													

Abbreviations

CBO – Community Based Organization
CGM - County Government of Turkana
CWS - Community Wildlife Service
SRS - Senior Research Scientist
CGM - County Government of Marsabit
CW - Community Warden
FoLT - Friends of Lake Turkana

5. Protected Area Operations and Security Programme

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: Effective management systems and human resource capacity deployed														
1.1 Institute a unified organisational structure in the LTNPs to strengthen the LTNPs management														
1.1.1 Develop and implement a policy brief document	Park Wardens LTNPs													Draft document to have mgt synergy Briefs drafted and presented to DG
1.1.2 Present Policy brief to the BOT	DG													
1.2 Draw an MOA between KWS and NMK to streamline management of Sibiloi National Park														Developed memorandum of agreement between NMK/KWS implemented
1.2.1 Undertake consultation by both organisation	DG NMK/ KWS													
1.2.2 A Memorandum of Agreement drafted by the legal teams KWS & NMK	DG NMK/ KWS													
1.2.3 MoA signed	DG NMK/ KWS													
1.3 Strengthen the human resource capacity of the LTNPS														Staff needs assessment done and rationalized in LTNPs
1.3.1 Establish the optimum staff level and harmonize it with the organizational structure	Wardens LTNPs, H-HC													
1.3.2 Fills gaps in staff deficit	H-HC													
1.4 Train staff in relevant skills														
1.4.1 Conduct training needs assessment for staff	Wardens LTNPs, H-HC													Training needs assessment done by Dec 2018
1.4.2 Carry out training of the staff as per the assessment outcome	Wardens LTNPs, H-HC													Trainings' identified and conducted as per assessments

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.3 Improve staff welfare and motivation														8 Blocks of ranger staff houses constructed
1.5.1 Construct office block, ablution blocks and staff houses at South Island and Central Island Park HQ	Warden in-charge, DG													2 Office blocks 2 Wardens incharge houses
1.5.2 Provide communication networks in SNP and the satellite phones	Warden SINP, DG													Provide adequate reli-able communication devices
1.5.3 Provide clean drinking water in the parks	Warden in-charge, DG													Purchase bowser to CINP Undertake piping works at SINP
1.5.4 Construct staff canteen in SINP and the Central Island N.P	Warden in-charge, DG													2 Canteens constructed and furnished
1.5.5.Construct a dispensary at Karsa Gate and staff house	Warden SINP, DG													Dispensary constructed to assist also locals 2 blocks of staff houses constructed
1.5.6 Provide recreational facilities to the staff at the parks	Warden in-charge, DG													Purchase facilities for key disciplines (TV, Pool table, Darts, Scrabble)
1.6 Strengthen collaboration between LTNPs managers														
1.6.1 Hold regular meetings among the senior park managers	Warden in-charge													Rotational meetings held
1.6.2 Prepare joint annual work plans	Warden in-charge													Consolidated Work plan documented and submitted

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 2 : Infrastructure to support tourism, ranger operations and administration improved														
2.1 Provide reliable water supply														Machine rehabilitated
2.1.1 Rehabilitate the desalinization plant in SNP	Warden SNP													
2.1.3 Provide of desalinization plant at Kokai camp (SNP)	Warden SNP													
2.2 Construct and maintain residential and office buildings														Facility purchased and fixed
2.2.1 Construct office blocks, residential and ablution blocks at SINP and CINP	Wardens in-charge													
2.2.2 Rehabilitate SNP houses	Warden in-charge													All houses rehabilitated
2.2.3 Construct additional staff houses and storage facilities in SNP	Warden in-charge													Construction and proposals submitted
2.3 Install and maintain park boundary markers														
2.3.1 Mark boundaries of the parks with visible beacons and buoys	Warden in-charge & KWS –HQ Lands office													Provide management support Define exact and clear area of management
2.3.2 Extend the park boundaries and gazette to include 2 Km from the shoreline of SNP and CINP	Warden in-charge, DG													
2.4: Improve and maintain the road network in the park														
2.4.1 Allocate adequate funds for road maintenance in SNP	DG, Warden in-charge													Funds disbursed Bush clearing and damaged areas refilling
2.4.2 Upgrade the classes and open up existing road network	Warden SNP													
2.4.3 Construct drifts and culverts	Warden SNP													No of drifts and culverts erected Roads passable

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.5 Maintain and construct airstrips in strategic locations														
2.5.1 Upgrade the Aliya bay and Kobi Fora airstrips	Wardens LTNPs													Two airstrips graded Airstrip constructed
2.5.2 Construct the South Island Airstrip within the park	Warden in-charge													
2.5.3 Improve Shine airstrip	Warden in-charge													Airstrip revamped
Objective 3 : Vehicle, plant machinery and equipment provided and maintained														
3.1: Procure vehicles, plant and machinery														• Improve efficiency and revenue increase • (Park management 2 • Security 1, 1 Tourism,1 community and Education for Sibiloi) • Efficiency management of island Parks
3.1.1 Procure six new L/Cruisers for security and park operations in SNP	DG, Wardens in-charge													
3.1.2 Procure 2 new L/Cruisers for SINP	DG,Warden in-charge													
3.1.3 Procure 1 L/Cruiser and a water boozer for CINP	DG, Warden CINP													
3.1.4 Procure 3 new patrol boats for the parks	DG, Wardens in-charge													• Secure transportation and revenue increase
3.1.5 Procure farm tractor and trailer	DG, Warden SNP													• Support Road construction, towing
3.2 Procure and maintain office and telecommunication equipment														Have efficient and productive communication by end of 2019
3.2.1 Provide telecommunication network in SNP	Warden SNP													
3.2.1 Procure office computers, printers, scanners, projectors for the LTNPs	Wardens in-charge													
3.2.3 Procure the office furniture for the SINP and CINP	Wardens in-charge													

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
3.2.4 Procure scientific equipments (GPS gargets, Binoculars, Night Vision gadgets, weather recording equipments, cameras)	Wardens in-charge													For efficient reporting and monitoring the ecosystems stock
Objective 4: Wildlife, habitat and visitor security enhanced														
4.1 Intensify security patrols both inside and outside the parks														Establish and equip a combined marine unit to secure LTNPs • For efficiently secure 90% of the parks habitats and biodiversity resources
4.1.1 Establish a well-equipped marine unit for the LTNPS	DG, Wardens in-charge													
4.1.2 Provide adequate and reliable patrol vehicles in SNP	DG, Wardens in-charge													
4.1.3 Undertake joint patrols on livestock drives	DG, Wardens in-charge													
4.1.4 Provide reliable patrol boats	DG, Wardens in-charge													Reliable patrol boat availed by end of 2019
4.2 Identify and map poaching hotspots in the LTNPs in collaboration with other stakeholders														Survey report produced
4.2.1 Undertake field survey of hotspots	Wardens in-charge													
4.3 Establish patrol outposts														2 bases introduced, equipped and facilities erected by end of 2018
4.3.1 Establish a patrol base at around Kokai and Camp Turkana	Warden in-charge													
4.3.2 Equip each patrol base with vehicle, sets of binoculars and GPS	Wardens in-charge													
4.4 Liaise with the necessary institutions (judiciary and court users association) to enhance penalties for poachers														
4.4.1 Create awareness on judiciary and court procedures	Wardens in-charge													Awareness created to court users
4.4.2 Conduct exposure tours for stakeholders	Wardens in-charge													4 Tours conducted
4.5 Train rangers in conservation and protection of archaeological sites														
4.5.1 Conduct ranger training on basics of archaeological importance and protection	Wardens in-charge, HRO, H-HC													Two training conducted annually

Management Action and Activities	*Persons Responsible*	*Timeframe*												*Milestones*
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.5.2 Conduct regular induction ranger courses on prehistoric interpretation	Wardens in-charge, HRO, H-HC													Continuous Quarterly trainings done
4.6 Enhance patrols at the identified archaeological sites														
4.6.1 Map all archaeological sites	Wardens in-charge, TBI, NMK													Status reports produced
4.6.2 Conduct regular ground and aerial patrols on these sites	Wardens in-charge, NMK, TBI													Patrol reports
4.6 Enhance visitor safety and security														
4.6.1 Create linkages with tourism and security agencies	Wardens in-charge													Enhanced security awareness
4.6.2 Establish an elaborate communication system to enhance visitor security	Wardens in-charge													Convenient system established
4.6.3 Established common frequency between tour operators, tourist facilities and LTNPS security staff to enable a rapid response	Wardens in-charge													Synergy identified and implemented
4.6.4 Establish a 24-hour hotline number for each park	Wardens in-charge													Re-establish satellite phone
4.7 Enhance collaboration with other security agencies to enhance security in the area														
4.7.1 Participate in District Security Intelligence Committee (DSIC) meetings	Wardens in-charge													Attend and contribute fully on issues affecting biodiversity and wildlife
4.7.2 Initiating cross border meetings with Ethiopia on wildlife security	Wardens in-charge													Attend to crucial meetings
4.8 Establish an intelligence unit for LTNPs														
4.8.1 Create a LTNPs intelligence unit	Wardens in-charge													Unit established
4.8.2 Identify and engage a network of suitable informants	Wardens in-charge													Informants recruited

ABBREVIATIONS

DG – Director General

HHC – Head Human Capital

HCO – Human Capital Officer
SINP – South Island National Park
CINP – Central Island National Park
SNP – Sibiloi National Park

Annex 2: Stakeholder Participation in Plan Development

Name	Organisation	Workshop						Working Groups				Consulted
		#1	#2	#3	#4	Village level	Ecology	Prehistoric	Tourism	Community	Sec /PA Ops	
Abraham Awoi	Community member					X						
Adbirizauh Ibrahim	FOLT		X									
Aemun John Kariuki	Deputy Principal Loiyangalani Secondary,			X								
Agnetta Biwott			X									
Alex Nluisyo	KWS		X									
Alice Wairimu Gathogo	Community Liason Officer	X										
Antonella K. Dotsu	Tourism Officer.	X										
Apollo Kariuki	H-PEC, KWS	X	X		X		X	X	X	X	X	X
Apukey Sylvia	TCG		X									
Arthur Wanyoike	D. O I Loiyangalani	X										
Benard Ogonka	RT	X										
Benedict Orbora	Proprietor, Palm shade Resort			X								
Bernard Kuloba	Senior Research Scientist KWS	X	X			X	X	X	X	X	X	X
Bernard Ogwoka	Research technologist, kws	X		X								
Bonface Onyango	Warden,KWS	X		X								X
Boniface Ekiru Loneer	TCG		X									
Cassianes Olilo	KMFRI		X									
Chadwick Bironga	Research officer KNFRI	X		X			X					X
Charles Egare	CEC – Roads	X										
Charles Otieno Aoko	Curator	X										
Dabello Duba Katelo	Chairman Cultural	X										
Damaris Thairora	Secretary, KWS						X		X	X	X	X
Dan Muinde	OOP		X									
Daniel Inoiteles	Community member					X						
Darius Kayago	KWS - Projects	X			X	X	X		X	X	X	X
David Ebayi	Community					X						

Name	Organisation	Workshop						Working Groups				Consulted
		#1	#2	#3	#4	Village level	Ecology	Prehistoric	Tourism	Community	Sec /PA Ops	
	member											
David Eira Logel	Naremiet		X									
David Kimotho	Corporal	X										
David Kones	Warden KWS	X	X		X	X	X	X	X	X	X	X
David Loburjica	Chairman, Nanyori CBO			X								
Dickson Chep-chieng	Clerk of Works		X									
Donald Sagwa	Ranger,KWS			X								
Dr. Galgallo C- Ali	Chair CWCCC/MBT		X									
Ebulon Ekuwom	TCG		X									
Edorin Elebey	Community member					X						
Edward Mutinda Muathe	PC	X										
Egonyo Lontait	Ministry of Interior		X									
Egonyo Lonyait	ILLE		X									
Ekim Samuel Nan-golol	TCG		X									
Elee Luthohiya	Community member					X						
Emmanuel Ndiema	Senior Re-search Scien-tist NMK	X						X				X
Emmanuel Koech	SOOPs KWS	X										X
Emmanuell E. Echwa	CWCCC		X									
Erupe Josphat	Warden KWS		X								X	X
Evans Omondi	Tourist officer KWS		X			X						
Fabian Losekon	Driver		X									
Francis Etetabo	Community member					X						
Gabriel Eyienai	Community member					X						
Gedhia Mamo	CO - Tourism		X									
Grace Waiguchu	GIS Officer KWS			X	X							
Guyo Boru	Asst. Chief Darade	X										
Habara Moroto	Programme coordinator, TBI	X						X				X
Hambule Chupal	AD. Conser-vancy		X									
Hoseah Wanderi	Researcher NMK	X						X				X
Hussein Adano	Corporal	X										
Ikal Angelei	Director		X									
Iral Ikayomis	Community					X						

Name	Organisation	Workshop					Working Groups					Consulted
		#1	#2	#3	#4	Village level	Ecology	Prehistoric	Tourism	Community	Sec /PA Ops	
	member											
Irene Kanangi	OOP		X									
Isaac Nduruchi	TCG		X									
IsaackNaskel	Community member					X						
Ishaerk Iroo	Community member					X						
Israel Makau	Research Scientist KWS	X		X			X	X	X	X	X	X
Jackline Mutwiri			X	X	X	X						
Jackline Wangechi	OOP		X									
Jackson Emrer	Community member					X						
Jallani Boru	KWS - CWS	X										
Jamal N. Kamau	Director Roads	X										
James Learamo	Accountant	X										
James Chepkwony	Procurement	X										
James Ekari	Community member					X						
James Eref	Community member					X						
James Kunoi	Community member					X						
James Kwama	Community member					X						
James Laseny	TCG		X									
James Last Keyombe	KMFRI		X									
Jatani Boru	Sergeant ,KWS			X								
Job K. T Kemey	DCC NH	X										
Joel Chebii	OCPD North - Horr	X										
Joel W. Mburu	ACC	X										
John Musina	Research Scientist NMK	X						X				X
John Esekon	Boat Owner, Beach Management Unit			X								
John Eter	Community member					X						
John Etiwala	Community member					X						
John Said	OOP		X									
Joseph Edebe	Senior Research Scientist, KWS	X					X	X	X	X	X	X
Joseph Awawoyi	Community member					X						
Joseph Morlnya Lokotor	Community member					X						

Name	Organisation	Workshop						Working Groups				Consulted
		#1	#2	#3	#4	Village level	Ecology	Prehistoric	Tourism	Community	Sec /PA Ops	
Joyce Kabura	Planning NMK	X						X				X
Kebo Paul	TCG		X									
Kenson Kunyuk Kamasot			X									
Kevin Opondo	CWS - KWS	X									X	X
Koriye. M. Koriye	Ward Admin-Illeret	X										
Loisike Muhindi	Community member					X						
Lokitir Iyole	Elder, Turkana Cultural Group			X								
Lokotar Elrwan	Community member					X						
Mark Amiyo Ey-anae	TCG		X									
Mark Emekwi	Namukuse BMU		X									
Martha Nzisa	Resource Planner KWS			X			X		X	X	X	X
Martin Kirunya	Chief Technician, TBI											X
Michael Ayien	Community member					X						
Michael Ithumais	Community member					X						
Michael Lokoni Lotonia	Community member					X						
Michael Moroto	Chief - Ileret	X										
Mohamed Irack Godana	Corporal	X										
Mohamed Rage Balle	DARC ASP	X										
Mohamed Suba	CEC – Roads	X										
Nancy Esekon	TCG		X									
Napulo Lokok	Chief Moite	X										
Odhiambo Cosmus	Secretary, Nanyori CBO			X								
Paul Kibet	OC	X										
Paul Ereng	Youth Representative, Catechis			X								
Paul Omondi	Warden KWS				X							
Paul Wambi	Warden, KWS						X		X	X	X	X
Paul Wambugu	Warden KWS		X			X			X	X	X	
Paulo Ekoiran	Community member					X						
Paulo Eoyi	Community member					X						
Peter Lekeren	SW - KWS	X										
Peter Emase	Community					X						

Name	Organisation	Workshop						Working Groups				Consulted
		#1	#2	#3	#4	Village level	Ecology	Prehistoric	Tourism	Community	Sec /PA Ops	
	member											
Peter Losike	Community member					X						
Peter Nariku Erwan	Community member					X						
Peter Nyangau	Community member					X						
Philip Edkan Erwan	Community member					X						
Philip Eketar	Community member					X						
Philip Elabe Ey-anae	Longech BMU		X									
Philip Epem	Community member					X						
Philip Etabo	BMU		X									
Philip Eyier	Community member					X						
Quleib Ekaran	Community member					X						
Robert Oboloniya	Community member											
Roberts Ikai	Community member					X						
Roberts Waroho	Community member					X						
Rolf Gloa	ES		X									
Sammy Towett	Ag. Market Research manager KWS	X						X				
Sammy Ejiye	Community member					X						
Sammy Ewegeti	Community member					X						
Samson Ekuom	Community member					X						
Samson Rokalita	Community member					X						
Scholastica Leka-pano	Community			X								
Sebastian Le-borkwe	Secretary, Lake Turkana Coop. Society			X								
Seif Matata	MSU Interior		X									
Simon M. Gitau	Asst. Director KWS			X			X		X	X	X	X
Simon Nakamu Olukumey	Community member					X						
Sostine Nanjali	AEO	X										
Stephen Ekal Eku-won	Impassa		X									
Steve Kamerino	Community Liason Officer	X										

Name	*Organisation*	*Workshop*						*Working Groups*				*Consulted*
		#1	*#2*	*#3*	*#4*	*Village level*	*Ecology*	*Prehistoric*	*Tourism*	*Community*	*Sec /PA Ops*	
T . N Kinyua	WRMA – SRM MBT	*X*										
Thomas Kipreba	TCG		*X*									
Thomas Owajiakiel	Community member					*X*						
Unar Ahmed Mohamed	Asst. Chief Charipollo	*X*										
Walter Tanui	WRMA		*X*									
Wanam Ipa	Community member					*X*						
William Lopolian	KWS – Platoon Commander	*X*										
Wolfgang Descher	Investor (Formerly owner Oasis Hotel) Loiyangalan			*X*								
Yasin Gambere	A.C.C Hq	*X*										
Yekowei Kuree	Community member					*X*						

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