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# Environmental Planning for Biodiversity Conservation and Sustainability: Case of Olkaria Geothermal Field, Kenya

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## ABSTRACT

Major geothermal prospects occur in fragile ecosystems, constituting a rich tapestry of all forms of life and the ecosystems of which they are part of. Ensuring intra- and intergenerational equity in geothermal development is critical for conservation of biological diversity. Relative to the variety of habitats, biotic communities, and ecological processes in the biosphere, biodiversity is an important pre-requisite for all forms of life to exist, as it provides valuable ecosystem services. There exist several threats to biodiversity and biodiversity conservation, including loss of habitat, over-exploitation, pollution, and climate change. One of the key components crucial to economic and social development is energy. The current energy exploration and use has resulted in environmental changes with significant local and regional effects. To mitigate this, several environmental concerns including proper environmental planning in combination with environmental laws have to be put into consideration. This paper highlights key factors the Olkaria project has been applying to make it into a success story.

## 1.0 INTRODUCTION

Geothermal exploration in Olkaria started in 1960, while Hells Gate National Park (HGNP) was gazetted in 1984. This shows co-existence between two opposing activities within one ecosystem, conservation and development. It is located approximately 120 km North West of Nairobi, Nakuru County, Naivasha sub-county at coordinates $00^0$ 54'25.0'' S, $36^0$ 19' 24'' E ( Latitude 0.906944;Longitute $36^0$ 19' 24''[1]). Proper management of ecosystems consists of maintaining healthy and balanced populations. The ecosystem is home to a wide variety of plains game mammals and diverse bird species that utilize the diverse habitats ranging from rocky cliffs to savannah bushland and grasslands (KWS, 2010). Various challenges exist in this ecosystem, among them conflict of interest between geothermal exploration and wildlife management, habitat conversion due to on-going geothermal projects, and in general HGNP suffers 'tragedy of the commons'. Being a very delicate ecosystem, various strategies have been applied to make sure the project strikes a balance and ensure there is sustainable development in this ecosystem. This has been done to ensure co-existence between the two opposing activities, i.e. conservation and development in a protected area.

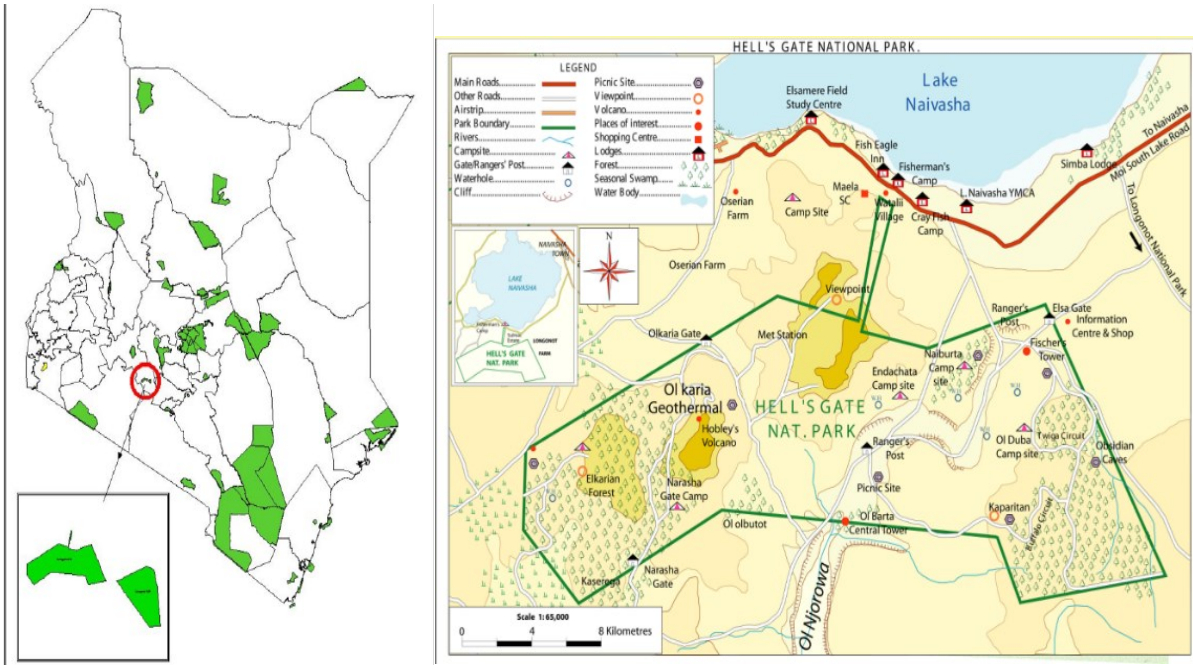


**Figure 1: Study area in map of Kenya, Source: Kenya Wildlife Services**

[1] Google (12th August 2020): Location of Olkaria V geothermal power station

Sustainable development calls for the need to strike a balance between economic development and biodiversity conservation in-line with United Nations Sustainable development goal (SDG-15)[2]. Accelerated expansion of geothermal development at Olkaria has presented some new challenges to biodiversity conservation despite all projects being subjected to Environmental and Social Impact Assessment (ESIA) studies. Bearing in mind that part of the geothermal field lies within Hell's Gate National Park, this calls for proper planning, close monitoring of environmental aspects, and implementation of adequate mitigation measures to ensure harmonious coexistence with biodiversity.

### 1.1 Background

Naivasha area, which is where HGNP is located, has been categorized as ecological zone IV, Arid and Semi-Arid Land. (ASAL). In the wake of increased land degradation and land use change in the past few decades, particularly in ASALs, it has become increasingly necessary to try all available approaches and strategies to restore these ecosystems (Biamah, 1988; RAE, 2003). HGNP is unique in that it is the only Kenyan National Park in which human activities have been allowed. This is in quest of Kenya's ambitious strategy to have cheap and clean electric energy[3], which in this case is geothermal energy. Initial activities of geothermal exploration involve environmental disturbances, which leads to degradation. But this does not necessarily mean the ecosystem cannot support any ecosystem service (Meyerhoff, 1991). Instead, the activities only upset the dynamics of these fragile ecosystem energy flows, biogeochemical cycles, hydrological cycles, and increased aridity (Dregne, 1992), possibly all resulting in a downward spiral of ecosystem structure and function decline (King and Hobbs, 2006). Various conservation stakeholders accused KenGen geothermal project of causing the above changes[4], although these accusation have not proved scientifically. For sustainability and peace with conservation stakeholders, environmental planning and management, plus adherence to environmental laws has been a crucial tool for the success of KenGen Geothermal project. It is important to note that biodiversity conservation has a direct impact and relevance to any business[5].

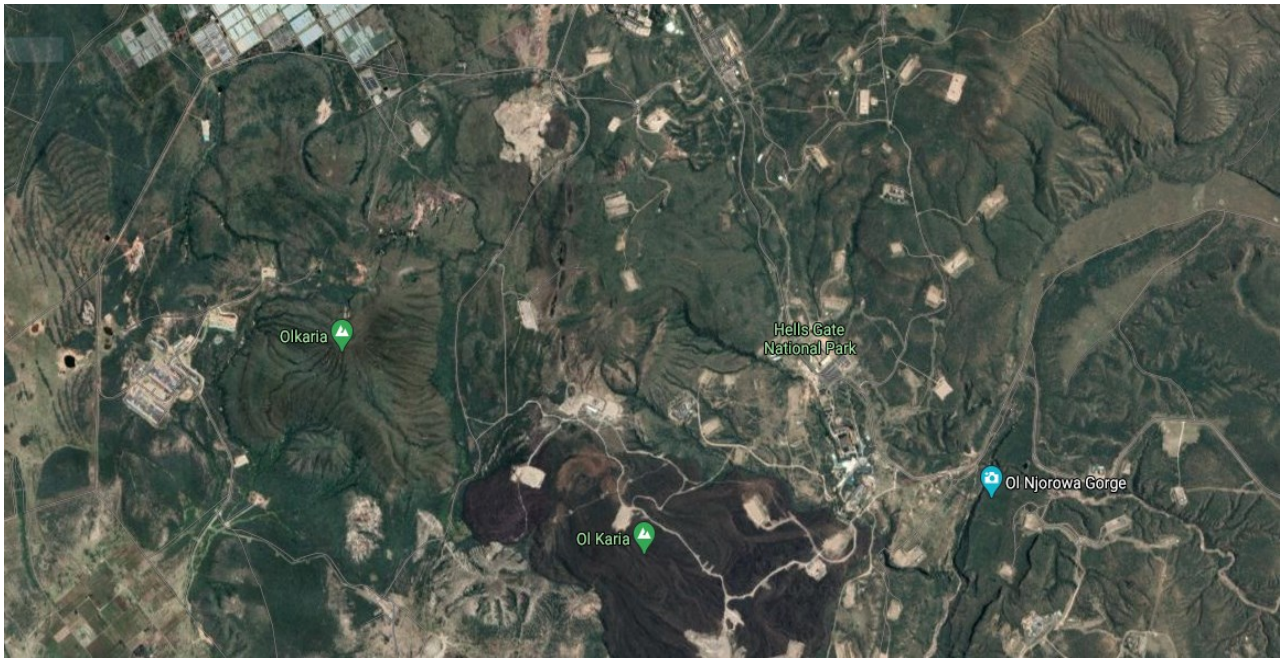


**Figure 2: Map of project area depicting beautiful terrain and ecological foot print, Source: Google map**

## 2.0 LITERATURE REVIEW

Researchers and policy makers around the world have articulated the imminent importance of conserving life supporting systems services without undermining the health and lifestyle benefits that accompany economic growth.

At the core of the declaration made by the World Commission on Environment and Development 1987 (Kidd 1992; Ree 1995; Daly 1996; McDonough and Brarugat 2002; Robinson 2004: Jackson 2009; Orr 2011), is that environmental degradation threatens to breach critical and sometimes irreversible limits, but simply upending the economic process at the root of global environmental damage that threatens the health of ecosystems is not the answer. Rather, they explain that policy makers should seek alternative sustainable pathways that reconcile the competing priorities like conservation and development, especially in protected areas

[2] Protect, restore and promote sustainable use of terrestrial ecosystems, sustainable manage forests, combat desertification, and halt/reverse land degradation and biodiversity loss

[3] SDG-7 Ensure access to affordable, reliable, sustainable and modern energy for all

[4] Hells Gate factories:" Alarm over Kenyan famed park" Star newspaper 7th May 2014.
What price energy-Pg. 76 Swara magazine,Jan-Mar,2013 vol 37

[5] Essential for implementing mitigation hierarch efficiently and for making project bankable, Lenders and stakeholders require objective and data based approach to mitigation rather than standard ESHIA description, Good survey designs ensure data are relevant, create opportunities for avoidance and minimization, and avoid project delays

In the recent years, policy for sustainable development has diffused from international declaration and scholarly observation to local comprehensive plans, demanding that planners and policy makers strike a balance between competing environmental, economic and social priorities. (Campbell 1996; Patterson 2008; Portney 2013). Where, how and by whom these different priorities get reconciled remains a question without extensive scrutiny; but with important theoretical implications. In a sustainability framework, for the specific work of planners in the Southeastern United States (Boyer et al. 2016), biodiversity conservation is only one of many aspects that professionals responsible for diverse local issues must take into account.

The concept of sustainability control in protected areas aims at creating permanent, institutional, and internal processes. Sustainable development calls for the need to strike a balance between economic development and biodiversity conservation. The loss of biodiversity impacts directly on delivery of ecosystem services as a whole (European Union 2013).The Convention on Biological Diversity (CBD 1992) emphasizes the promotion of environmentally sound and sustainable development in areas adjacent to protected areas.

Goal 1.4, of the program of work on protected areas, specifies that these areas of the management plan should include provisions for sustainable development opportunities and measures for climate change adaptations. Goal 4.3 and 4.4, state that the government should assess and monitor protected area status and trends, and ensure research and scientific knowledge constitute to the establishment and effectiveness of protected areas and systems. Typically, the plans fit into a suite of legislations, policies and plans for agencies, corporations, and business organizations. In most of the African Countries, protected areas management is guided by policies and plans which define the what, where, and how of a given activity in the conservation area.

In the wake of increased land degradation and land use change in the past few decades, particularly in ASALs, it has become increasingly necessary to try all available approaches and strategies to restore these ecosystems (Biamah, 1988; RAE, 2003). Various strategies of environmental planning have been employed to solve the current challenges.

## 3.0 CONSERVATION STRATEGIES EMPLOYED

Four main strategies have been employed; HGNP planning and zonation, ecological management programs, effective stakeholders engagement and adherence to various environmental laws.

### 3.1 HGNP planning and zonation

HGNP has a management plan herein referred to as 'Hells Gate-Mt Longonot Ecosystem Management Plan'. A key element of the plan is the zoning plan which provides prescriptions on what should occur in different parts of the protected area. It plays an important role in minimizing conflicts between different users of the park by separating potential conflicting activities, whilst ensuring that activities that do not conflict with the park values and objectives, can continue in appropriate areas. Four zones have been designed for HGNP, i.e. high use zone, low use zone, closed zone, and influence zone. Further zoning has been done in blocks which ecologists use to monitor wildlife species distribution in reference to land use change. KenGen activities are located in blocks 3, 5, and partly block 1.These blocks fall within high use zone, low use zone, and influence zone. The primary objective of the plan is to provide a framework to guide managers in the conservation and management of HGNP. A key element of the plan is the zoning plan, which prescribes what should be done or not done in different parts of the protected area. Three major goals underpin the zonation schemes:

- Protection of exceptional ecological and scenic values, especially the sensitive ecological habitats and breeding areas for rare and threatened bird species, and geomorphological features.
- Strengthening of the area's tourism products as detailed in the HGNP tourism program.
- Promoting geothermal production

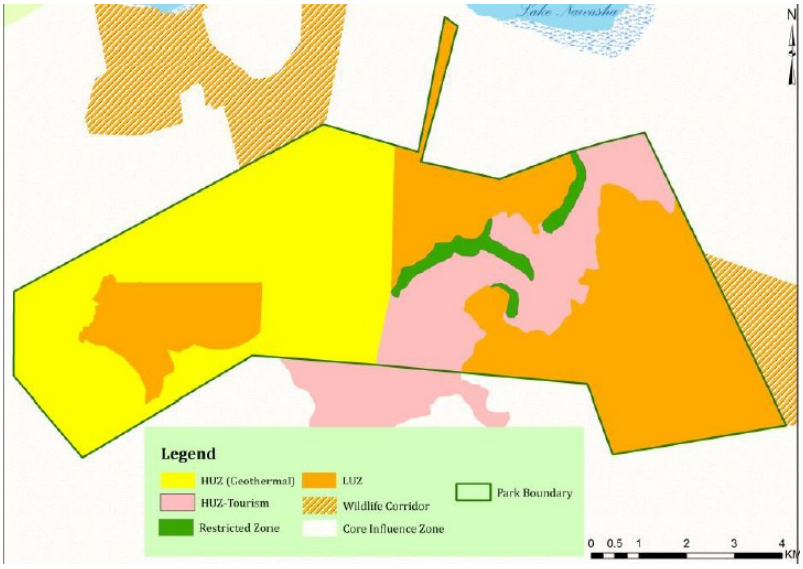


**Figure 3: Zonation of HGNP for environmental planning, Source: Kenya Wildlife Services**

### 3.2 Ecological management program

Any ecological management program has a specific purpose and guiding principles. This ecosystem has experienced changes over time ranging from ecological changes, such as significant loss and fragmentation of wildlife habitats partly due to massive expansion of geothermal power production infrastructure in the park, and rapid expansion of human population density in the greater HGNP landscape. Balancing the competing needs remains a great challenge. To conserve biodiversity, ecological management programs in this area target habitat and species management. Measures include: Ecological monitoring such as invasive species monitoring; invasive species control programs; bi-annual wildlife census targeted at monitoring population and movement of wild animals within the project site; Environmental Impact Assessment and Audit for project specifics; and strict adherence to developed Environmental Management Programs. Other monitoring programs include habitat assessment for wildlife utilization and daily weather aspects monitoring.

**Figure 4: Animal migratory routes passing loop, Camouflaged steam pipe, Source: Author**

The guiding principal for Olkaria Geothermal Project Ecological Monitering program are:

1. Maintaining the balance between conservation and development
2. Understanding and monitoring the dynamics of the ecosystem.
3. Maintaining the ecosystem connectivity to increase resilience
4. Provide the leadership role of KenGen/KWS-HGNP research sections

### 3.3 Stakeholder involvement and management.

Stakeholder engagement should be at the heart of any "sustainable development" agenda. Engaging with stakeholders is acknowledging that a business is an interdependent entity, which is impacted by and has an impact on many different groups. Stakeholder involvement can be described as an organization's efforts to understand and involve stakeholders, and their concerns, in its activities and decision-making processes (Ceres, 2007).

Stakeholder engagement is when a company initiates open, two-way dialogue seeking understanding and solutions to issues of mutual concern (Altria Corporate Services, Inc. 2004). It involves discovering, and may result in implementing, ideas that benefit both stakeholders and the company. This engagement was highly put into practice during the recent HGNP management plan 2019-2029 draft development.

Olkaria geothermal project, sited within the HGNP ecosystem, is co-managed by various stakeholders. Key among them being KenGen and Orpower as tenants, Kenya Wildlife Services as a host, and other conservation interest groups such as private landowners and ranchers. This called for a highly participatory development of a ten-year management plan. The plan incorporates and builds ideas from a broad cross section of management stakeholders. In order to be a practical management tool in the ecosystem, the plan set out strategic guidance for the management goal [6] and a series of prescriptions and management actions to be implemented in order to achieve the goal. Three key principal mechanisms used to enable full participation from key stakeholders are development of Core Planning Team, stakeholders' workshops, and expert working groups. Each mechanism had its role and functions, such as providing overall guidance and oversight to the whole planning process, a role provided by the Core Planning Team. Stakeholder workshops were to identify the exceptional resources and purpose of HGNP, and also identify key problems and issues the plan must address, such as provision of migratory routes for ecosystem connectivity between the park, neighbouring conservancies, reserves and the only water source, Lake Naivasha

The expert working groups included the ecologists and researchers, tourism, community, geothermal operation experts and security working groups. It is important to note that the research working group was represented by experts from two interest organization, i.e. KenGen and KWS, to ensure the interests of each party are well captured whilst enabling both organization to achieve their institutional objectives equally.

[6] To protect and conserve unique geomorphological and biological resources, especially threatened mammals and bird species of HGNP, for inter- and intra-generational equity

| | | | |
|---|---|---|---|
| Kenya Wildlife Service | KenGen Energy for the nation | AKIIRA GEOTHERMAL LIMITED | OrPower 4 Inc |
| AGIL | Oserian | Kedong Ranch | Elsamere Conservation Centre |

**Figure 5: Major stakeholders, Source: Kenya Wildlife Services**

### 3.4 Environmental laws and regulations

The current legal provisions for natural resource management in Kenya are contained in over seventy-seven (77) sector-specific statutes. For a long time, the country lacked an umbrella legislative guide for harmonious and holistic environmental management. Such resources were managed sectoral, in accordance with the statutes that were in place. However, sometimes these statutes were contradictory. In 1999, the government enacted the Environmental Management and Co-ordination Act (EMCA) which is an umbrella legal framework under which the environment is being managed.

Kenya is also a signatory to various international environmental laws that address biodiversity issues, including the Ramsar Convention, the Vienna Convention, Convention on Biological Diversity (CBD), and Convention on International Trade of Endangered Species(CITES) among others.

Key among laws which KenGen adheres to are Constitution of Kenya 2010[7], Environment Management and Coordination Act 1999[8], Geothermal Resources Regulation 1990[9], Wildlife Conservation and Management Act 2013[10] and Water Resources Act.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

Environmental planning and management aim at conserving major ecological services and restoring natural resources, while meeting the needs of both current and future generation. Olkaria geothermal project/HGNP serves two main purposes: Source of clean renewable energy for the nation therefore serving the needs of current generation, and at the same time, the area is depended on to conserve the wildlife for future generation. The two organizations with two parallel objectives must at the end achieve their objectives equally (KenGen for electricity generation and Kenya Wildlife Services for Wildlife Management).

The Exceptional Resource Value of Olkaria Geothermal Project area/HGNP describes the parks key natural resources and other features that provide outstanding benefits to local, national and international stakeholders and that are especially important for maintaining the area unique qualities, characteristics and ecology. Olkaria Geothermal project, which is in essence HGNP, has more than 100 species of animals and several types of plants (360) some of which fall in different categories under IUCN red list.

Maasai giraffe browse alongside geothermal power infrastructure in Hell's Gate National Park, Kenya. ADAM WELZ

**Figure 6: Animals utilizing areas within geothermal area. Source; Adam Wilz**

Therefore, it is a delicate balance between power generation and conservation of park resources. To ensure geothermal infrastructure development puts into consideration the various ecological /biological needs, Policy makers, researchers and planners must come

[7] Sections 42,69 and 70;Right to clean environment, Achieving and maintaining tree cover of atleast 10% and provision of a *locus standi*
[8] Sections 3,58:Right to clean environment, mandatory ESIA for project of given threshold
[9]Regulation 13-Protect the quality of terrestrial natural resources such as land, wildlife, vegetation and natural history
[10] Section 13-Unlawful acts in protected areas of Kenya

together to develop plans, and periodically evaluate them, for efficiencies and practicability. Kenya protected areas management plans are guided by the Constitution of Kenya, Environmental Management and Coordination Act, 1999 and various Multilateral Environmental Agreements, guided by key Principle of Environmental laws[11]. All these laws are geared toward proper environmental planning and management for sustainability of resources.

Some of the measures taken to enable co-existence between two conflicting activities in one area include dividing HGNP into Four main blocks of high use zone, low use zone, closed zone, and influence zone. This has efficiently helped to minimize conflicts between the users. More specifically, a MoU between the two organizations (KenGen and Kenya Wildlife Services) has ensured that each organizations achieves their objective squarely. A good example is joint baseline environmental surveys which are conducted to ascertain the status of any project area, the geothermal steam pipes have been designed to accommodate free movement of both small and big animals within the project site depending on documented animal routes. Pipes have been raised in different heights to counter the barrier effect in wildlife management. Color coding was perfectly matched to minimize the eye intrusion to both wild animals and visitors within the park.

Ensuring intra- and intergenerational equity in geothermal development is critical for conservation of biological diversity. Information about species assemblage and diversity serves a wide range of purposes in environmental management. The author therefore recommends further research based techniques of biodiversity monitoring which can be termed as efficient and smart, such as Principle of Species Distribution Modeling (SDM) tools. SDM refers to models which uses a species observed distribution and/biological characteristics to predict its actual (or potential) distribution. SDM has become a common approach for several fields of science including bio-geography, conservation biology, ecology, and wildlife management (Araujo et al.2006).With the above mentioned proposed research, clear relationships between land use change, animal behaviors, distribution, and population can easily be understood in this ecosystem, and hence easy planning implemented ahead for sustainability of both the park and geothermal resources.

**ANNEX**

**Table 1: Mammals found in Hells Gate National Park**

| No. | Scientific Name | Common Name |
|---|---|---|
| 1 | *Giraffa camelopardalis tippelskirchii* | Maasai Giraffe |
| 2 | *Phacochoerus africanus* | Warthog |
| 3 | *Equus burchellii* | Common Zebra |
| 4 | *Orycteropus afer* | Aardvark |
| 5 | *Syncerus caffer* | Buffalo |
| 6 | *Aepyceros melampus* | Impala |
| 7 | *Taurotragus oxyx* | Common Eland |
| 8 | *Alcephus buselaphus* | Coke heartbeats |
| 9 | *Nanger granti* | Grant gazelle |

**Table 2: List of plant specie**

| **Trees & Shrubs** | |
|---|---|
| **Scientific Name** | **Common Name** |
| *Acacia drepanolobium* | Whistling thorn |
| *Crotolaria scassellatii* | Rattle pod |
| *Tarchonanthus camphoratus* | Camphor bush |
| *Lippia kituiensis* | N/A |
| *Rhus natalensis* | Sumac bush |
| *Dodonaea angustifolia* | Hop bush |
| *Acacia xanthophloea* | Naivasha thorn |
| *Euphorbia candelabrum* | Candelabra tree |
| *Carisa edulis* | Simple spined num |
| *Obetia randula* | Giant stinging nettle |
| *Teclea simplicifolia* | - |
| *Grewia similis* | - |
| *Olea africana* | Olive tree |
| **Scrubs, Ferns and Herbs** | |
| **Scientific name** | **Common name** |
| *Aerva lanata* | - |

[11] Sustainable development; Integration and Interdependence; Inter and Intra-generational equity; Transparence; Public participation and access to information; Precaution and Prevention etc.

| | |
|---|---|
| *Agathisanthemum globasum* | - |
| *Bidens pilosa* | Black jack |
| *Buchnera hispida* | - |
| *Chamaecrista mimosoides* | - |
| *Commelina africana* | - |
| *Commelina benghalensis* | Wandering jew |
| *Craterostigma pumilum* | - |
| *Pellaea calomelanos* | Fern |
| *Hirpicium diffusum* | |
| *Crossandra subacaulis* | - |
| *Crotalaria scassellatii* | - |
| *Dychoriste clinopodioides* | - |
| *Euphorbia crotonoides* | - |
| *Euphorbia inaequilatera.* | - |
| *Felicia muricata* | - |
| *Fuerstia africana* | - |
| *Gerbera viridifolia* | - |
| *Grassula alba* | - |
| *Helichrysum globasum* | - |
| *Hibiscus vitifolius* | - |
| *Indigofera volkensii* | |
| *Justicia anselliana* | - |
| *Justicia calyculata* | |
| *Kalanchoe densiflora* | - |
| *Kalonchoe prittwitzii* | - |
| *Monsonia angustifolia* | |
| *Ocimum gratissimum* | |
| *Pavonia urens* | |
| *Pellaea calomenalos* | |
| *Peucedanum aculeolatum* | |
| *Polygalla sphenoptera* | |
| *Portulaca quandrifida* | |
| *Satureia biflora* | |
| *Sida ovate* | |
| *Sida tenuicarpa* | Sida |
| *Silene burchellii* | |
| *Solanum incunum* | Sodom apple |
| *Thunbergia cordifolia* | - |
| *Tribulus terrestris* | |
| *Utricularia inflexa* | - |
| *Zornia setose* | |
| **GRASSES** | |
| **Scientific name** | **Common name** |
| *Fimbristylis exilis* | Geothermal rash |
| *Cymbopogon citrates* | Lemon grass |
| *Themeda triandra* | Red oat grass |
| *Eragrostis cilianensis* | Stink grass |
| *Chloris gayana* | Rhodes grass |
| *Cynodon dactylon* | Star grass |
| *Digitalia ternate* | Couch grass |
| *Tragus berteronianus* | - |
| *Hyparrhenia hirta* | - |
| ***Invasive species*** | |
| *Sida tenuicarpa,* | - |
| *Ocimum gratissimum* | Basil plant |
| *Nicotiana glauca* | Wild Tobacco |
| *Conyza bonariensis* | - |
| *Solanum incanum* | Sodom apple |
| *Psiadia punctulata* | - |
| *Hypoestes forskaolii* | - |
| *Senecio mesogrammoides* | - |

| | |
|---|---|
| *Filicia muricata* | - |
| *Senecio monroi* | - |

**Table 3: Birds found in HGNP**

| No. | COMMON NAME | SCIENTIFIC NAME | IUCN Red Listing |
|---|---|---|---|
| 1 | Common Ostrich | *Struthio camelus* | Least concern (2018) |
| 2 | Great White pelican | *Pelecanus onocrotalus* | Least concern (2018) |
| 3 | Secretary bird | *Saggitarius serpentarious* | Vulnerable (2016) |
| 4 | Ruppells vultures | *Gyps ruppelli* | Critically endangered (2017) |
| 5 | White backed vulture | *Gyps bengalensis* | Critically endangered (2018) |
| 6 | Nubian vulture | *Torgos trancheliotis* | Endangered (2017) |
| 7 | Egyptian vulture | *Neophron percnopterus* | Endangered (2015) |
| 8 | Lammergeyer | *Gypaetus barbatus* | Near threatened 2017 |
| 9 | Harrier hawk | *Polyboroides radiatus* | Least concerned (2016) |
| 10 | Batleur | *Terathopius ecaudatus* | Near threatened (2016) |
| 11 | Auger buzzard | *Buteo augur* | Least concern (2016) |
| 12 | Long crested eagle | *Lophaetus occipitalis* | Least concern (2016) |
| 13 | African hawk eagle | *Aquila spilogaster* | Least concern (2016) |
| 14 | Tawny eagle | *Aquila rapax* | Least concern (2018) |
| 15 | Verreaux's eagle | *Aquila verreauxii* | Least concern (2016) |
| 16 | Whalberg's eagle | *Hieraaetus wahlbergi* | Least concern (2016) |
| 17 | African fish eagle | *Haliaetus vocifer* | Least concern (2016) |
| 18 | lanner | *Falco biarmicus* | Least concern (2016) |
| 19 | peregrine | *Falco peregrinus* | Least concern (2016) |
| 20 | African hobby | *Falco cuvieri* | Least concern (2016) |
| 21 | Fox kestrel | *Falco alopex* | Least Concern (2016) |
| 22 | Spotted eagle owl | *Bubo africanus* | Least concern (2016) |
| 23 | Cocqui francolin | *Francolinus coqui* | Least concern (2016) |
| 24 | Hildebrandt's francolin | *Pternistis hildebrandti* | Least concern (2000) |
| 25 | Scaly francolin | *Francolinus squamatus* | Least concern (2016) |
| 26 | Helmeted guinea fowl | *Numida melaegris* | Least concern (2018) |
| 27 | Kori bustard | *Ardeotis kori* | Near threatened (2016) |
| 28 | Crowned plover | *Vanellus colonatus* | Least concern (2016) |
| 29 | Common sandpiper | *Tringer hypoleuces* | Least concern (2009) |
| 30 | Temminck's courser | *Cuisorius temminckii* | Least concern (2016) |
| 31 | Speckled pigeon | *Columba guinea* | Least concern (2017) |

| | | | |
|---|---|---|---|
| 32 | Red eyed dove | *Streptopelia semitorquota* | Least concern (2016) |
| 33 | Ring necked dove | *Streptopelia capicola* | Least concern (2018) |
| 34 | Laughing dove | *Streptopelia senegalensis* | Least concern (2018) |
| 35 | Red chested cuckoo | *Cuculus solitarius* | Least concern (2016) |
| 36 | Didric cuckoo | *Chrysococcyx caprius* | Least concern (2016) |
| 37 | Klaas cuckoo | *Chrysococcyx klaas* | Least concern (2016) |
| 38 | White browed coucal | *Centropus superciliosus* | Least concern (2012) |
| 39 | Nightjar spp | *Caprimulgus spp* | Least concern (2016) |
| 40 | Mottled swift | *Apus aequatorialis* | Least concern (2016) |
| 41 | Nyanza swift | *Apus niansae* | Least concern (2016) |
| 42 | Little swift | *Apus affinis* | Least concern (2016) |
| 43 | Horus swift | *Apus horus* | Least concern (2016) |
| 44 | Speckled mousebird | *Colius atratius* | Least concern (2016) |
| 45 | White fronted bee eater | *Nerops bullockoides* | Least concern (2017) |
| 46 | African hoopoe | *Upupa epops* | Least concern (2017) |
| 47 | Bearded woodpecker | *Thripias namaquus* | Least concern (2016) |
| 48 | Red rumped swallow | *Hirundo daurica* | Least concern (2018) |
| 49 | Grey rumped swallow | *Hirundo grysiopyga* | Least concern (2018) |
| 50 | Grey wagtail | *Motacilla clara* | Least concern (2018) |
| 51 | African pied wagtail | *Moticilla aguimp* | Least concern (2016) |
| 52 | Richards pipit | *Anthus novaeseelandiae* | Least concern (2016) |
| 53 | Yellow vented bulbul | *Pycnonotis barbatus* | Least concern (2016) |
| 54 | Brown headed tchagra | *Tchagra australis* | Least concern (2015) |
| 55 | Tropical boubou | *Laniarus ferruineu* | Least concern (2016) |
| 56 | Common fiscal shrike | *Lanius collaris* | Least concern (2016) |
| 57 | Stone chat | *Saxicola lorguata* | Least concern (2016) |
| 58 | Schallow's wheateater | *Ocnanthe lugubris* | Least concern (2016) |
| 59 | Northern anteater chat | *Hyrmecocichla aethopia* | Least concern (2016) |
| 60 | Cape robin chat | *Cossypha caffra* | Least concern (2016) |
| 61 | White browed robin chat | *Cossypha heuglini* | Least concern (2016) |
| 62 | Black lored barbler | *Turdoides melanops* | Least concern (2016) |
| 63 | Wood warbler | *Phylosccopus sibilatrix* | Least concern (2015) |
| 64 | Willow wabbler | *Phyloscopus trochilus* | Least concern (2018) |
| 65 | Rattling cisticola | *Cisticola chinania* | Least concern (2018) |
| 66 | Tawny flanked prinia | *Prinia subflava* | Least concern (2016) |
| 67 | Black breasted apalis | *Apalis elavida* | Least concern (2016) |

| | | | |
|---|---|---|---|
| 68 | Red faced apalis | *Apalis rufifrons* | Least concern (2016) |
| 69 | Buff bellied warbler | *Phyllolais pulchella* | Least concern (2017) |
| 70 | Grey backed camaroptera | *Camaroptera brevicauda* | Least concern (2017) |
| 71 | Dusky flycatcher | *Alsenax adusta* | Least concern (2016) |
| 72 | White eyed slaty flycatcher | *Dioptornis fischeri* | Least concern (2016) |
| 73 | Chin spot flycatcher | *Batis molitor* | Least concern (2015) |
| 74 | Hunter's sunbird | *Nectarinia hunter* | Least concern (2016) |
| 75 | Scarlet chested sunbird | *Nectarinia senegalensis* | Least concern (2016) |
| 76 | Variable sunbird | *Nectarinia venusta* | Least concern (2016) |
| 77 | Bronze sunbird | *Nectarinia kilimensis* | Least concern (2016) |
| 78 | Golden breasted bunting | *Emberiza flaviventris* | Least concern (2016) |
| 79 | Cinnamon breasted rock bunting | *Emberiza tahapisi* | Least concern (2016) |
| 80 | Crimson rumped waxbill | *Estrilda rhodopyga* | Least concern (2016) |
| 81 | Common waxbill | *Estrilda astrild* | Least concern (2016) |
| 82 | Purple grenadier | *Uraeginthus tanthinogaster* | Least concern (2017) |
| 83 | Pin tailed whydah | *Vidua macroura* | Least concern (2016) |
| 84 | Bichenow's weaver | *Ploceus baglafetch* | Least concern (2016) |
| 85 | Viteline masked weaver | *Ploceus velatus* | Least concern (2016) |
| 86 | Yellow bishop | *Euplectes capensis* | Least concern (2016) |
| 87 | Rufous sparrow | *Passer motitensis* | Least concern (2016) |
| 88 | Grey headed sparrow | *Passer griseus* | Least concern (2016) |
| 89 | Redwinged starling | Onychognanthus morio | Least concern 2016 |
| 90 | Greater blue eared starling | Lamprotornis chalibaeus | Least concern 2018 |
| 91 | Superb starling | Spreosuperbus | Least concern 2016 |
| 92 | Red billed oxpecker | Buphugas erythrorhynchus | Least concern 2016 |
| 93 | Black headed oriole | Oriolus larvatus | Least concern 2016 |

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