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## Kenya's Soda Lakes workshop

4-6<sup>th</sup> December, 2013

Kenya Wildlife Service Training Institute (KWSTI), Naivasha, Kenya

### Introduction and objectives

Kenya is endowed with salty alkaline (soda) lakes all found within the Rift Valley which support a rich lacustrine wildlife, some of which are endemic and highly specialized to the unique environment within one particular lake. They form part of the East African Rift Valley System (EARS), a continental-scale tectonic structure that has evolved through Earth's history to the present scenic and architectural beauty of its geo-morphological features, characterized by steep fault escarpments, deep gorges, cinder cones and craters on the rift floor, gushing geysers and hot springs. Some of Kenya's soda lakes are hydro-geologically interconnected as opposed to most other saline lakes worldwide, and are essential to the hydrological cycle that contributes to geothermal energy. Heated geothermal waters contribute to the lake waters and result in very unique aquatic habitats that support unique assemblages of benthic and planktonic flora and fauna. Some lakes sustain enormous assemblages of birds, among which 75% of the globally significant population of the near-threatened Lesser Flamingo (*Phoeniconaias minor*). Three of the lakes are also part of a network of sites serving as stop-over, wintering or summering sites for millions of over 100 species of migratory water birds, soaring birds and other terrestrial bird species using the Great Rift Valley flyway.

Kenya's soda lakes have accumulated in their sediments a rich natural archive for palaeo-anthropology (hominin remains and artifacts), palaeo-climate and palaeo-ecological studies. Reconstructions of lake history based on dated time series of sedimentary data reveal unique trends in their hydrology, ecology and species richness, as the present-day soda lakes fluctuated through time between (strongly) alkaline and freshwater conditions. Further studies have revealed that the soda lakes are particularly rich in genetically diverse microorganisms. This rich microbial biodiversity plays a critical ecological role, for example algae and cyanobacteria constitute the base of the food web supporting the flamingo populations which are key tourist attractions.

Kenya's soda lakes now face various challenges, ranging from climate change and water extraction to direct habitat modification, all of which may have significant impacts on their existing biodiversity and genetic resources. Due to the uniqueness of these ecosystems, a number of researchers have carried out studies on various aspects of the soda lakes ranging from geology, geochemistry, paleoclimatology, ecology including the genetic diversity of various life forms, and applications of this knowledge in, for example, water resource management and biotechnology. Therefore bringing these experts together in a targeted workshop will provide useful scientific information that will support both the conservation of these unique ecosystems, and where necessary the development of effective legislation. This conference brings together scientists and researchers from around the globe who have conducted research on Kenya's soda lakes, to share their expertise and information generated in the course of their work. This will provide a platform for various leading experts on the soda lakes' genetic and biodiversity resources (microbiology, phycology and macro biota), geology, limnology, ecology, biogeochemistry, paleoclimatology and policy to share their wealth of experience and the implications of their findings, in order to stimulate the sound conservation and management of the soda lakes.

### Thematic areas

The workshop will run for three consecutive days with thematic sessions of both oral and poster presentations, and ample time for discussion. Various cross-disciplinary themes will be covered by professionals in the different fields of specialization. The themes to be covered are:

- Soda lakes formation, hydrology and long-term history (geology, hydrology, geochemistry, paleoclimatology, water-catchment processes);
- Soda lakes biodiversity and ecology: status and trends (genetic resources, energy sources and food webs);





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- Extremophiles (macro- and micro-fauna diversity), their adaptations and applications (eg in industrial process.);
- Conservation and management of the soda lakes (effective monitoring schemes, biodiversity, geology): indicators, legislation and policy gaps;
- Land use patterns around soda lakes and related catchment areas and impact on the lakes.

## Partners

This workshop is organized by the Kenya Wildlife Service, Ghent University (Belgium), University of Nairobi, Taita-Taveta University and the National Council of Science and Technology. The workshop brings together world leading Soda lakes researchers who will share their experience. The organizers are looking for more partners to contribute to the success of the workshop by both in finances and also participation.

## Venue and date

The workshop will tentatively be held at the Kenya Wildlife Service Training Institute, from 4<sup>th</sup> to 6<sup>th</sup> December 2013.

## Registration and Call for abstracts

Register for the Soda lakes workshop. Details for the programs can be obtained from the listed contacts.

Abstracts to be submitted by 15<sup>th</sup> October 2013 and full papers by 2<sup>nd</sup> November 2013

## Enquiries

Kavaka Watai Mukonyi

Email: [mwatai@kws.go.ke](mailto:mwatai@kws.go.ke)

Tel: +254 722 389 819

Priscillar Mutungi

Email: [pmutungi@kws.go.ke](mailto:pmutungi@kws.go.ke)

Tel: +254 722 923 008

Dirk Virschuren

Email: [dirk.verschuren@ugent.be](mailto:dirk.verschuren@ugent.be)

Tel: +32-9-264-5262

Daniel Olago

Email: [dolago@uonbi.ac.ke](mailto:dolago@uonbi.ac.ke)

Tel: +254-722-768-536

Hamadi Boga

Email: [hamadiboga@ttuc.ac.ke](mailto:hamadiboga@ttuc.ac.ke)

Tel: +254 720 483 136

