

Project Update: January 2019

1. Education, Awareness Creation on Human Crocodile Conflicts (HCCs) & Development of public safety programs

The study of Human crocodile interactions along Kerio River and Lake Kamanarok confirmed that public education is an important element of management. The findings that the local people are the ones having issues with N. crocodiles informed that education programs needed to focus on local population. During the study, the following important concerns were noted as the reason for the increase in HCCs:

- a) Habitat reduction and deterioration in Lake Kamanarok
- b) Movement of N. crocodiles into the Kerio River, into community dams i.e. Kipsoit Dam
- c) Human activities/encroachment and disturbance of N. crocodile habitats



Human activities i.e. fetching water, collecting firewood etc. in or near N. crocodile habitats increases the risks of attacks (Left) and conservation education and awareness creation about conflicts and avoidance (Right)

N. crocodile environmental education programs were developed within the species conservation areas to help promote more positive attitudes. The content in the education programs highlighted the following important points:

- a) Benefits and importance of the presence of N. crocodiles in the environment
- b) N. crocodile biology and behavior
- c) Human activities that threaten N. crocodile habitats
- d) Habitat significance and conservation adoption measures
- e) Information about what should be done in case of N. crocodile attack and how to avoid

In general, the safety awareness and education programs consisted of two important components:

- a) Education for safety awareness and

- b) Preposition of recommendation to help in monitoring N. crocodiles

The education & awareness involved the preposition and design warning signs which will be installed at the N. crocodile habitats with frequent human access i.e. Lake Kamnarok, Cheploch gorge & Kipsoit dam.

The following was proposed to help in monitoring N. crocodiles:

- a) Removal of the big N. crocodiles and just keep the sizes that do not represent a risk for humans, livestock and domestic animals and
- b) Relocation of problematic N. crocodiles

2. Promoting habitat protection, conservation & management

During the study, the human activities threatening N. crocodile habitats were identified. Measures to conserve the disturbed habitats were determined and the following activities have been undertaken and accomplished:

- a) Artificial propagation of over 4000 seedlings: The seedlings which include a mixture of native and exotic plants are now fully grown and ready for transplanting. The tree planting will involve participation of local community, government agencies and local NGOs.
- b) Sound waste disposal and management practices: Three dustbins have been designed to be placed at sites with frequent visitation and prone to pollution.



Over 4000 seedlings propagated to be transplanted at disturbed wildlife habitats and ecosystems.

3. Reptile surveys

The reptile surveys involved Visual Encounter Surveys (VES) and Pitfall traps with drift fences. To get a representative sample of reptilian species of Kerio Valley, we undertook samples in different areas and different microhabitats. A general habitat characterization was done using several parameters that were to be recorded within the sampling area representing the main habitat features (e.g., vegetation type, presence of rocky outcrops, streams and steepness of the terrain). Visual Encounter Surveys (VES) was used to document the presence of reptiles along transects, streams, ponds etc. The pitfall trap consisted of linear transects created at the survey sites. Each bucket line contained a plastic bucket sunk into the ground with their rims flush to ground level. The buckets contained small holes to allow rainwater to drain from them.

Each bucket was positioned 5 m apart. A sheet of vertical plastic (approximately 0.5 m high) run along the bucket line crossing the centre of each bucket to form a "drift fence". A 10-15 cm lip of plastic sheeting was left flat on the ground. Then, soil and leaf litter was placed to prevent any gap in the drift fence at ground level. This way, animals moving into the area from either side were channeled along the plastic towards the bucket traps.



The common agama (*Agama agama*) lizard species (Left) and Side-striped Chameleon (Right) targeted in reptile conservation and education.

All the reptile species observed were recorded using photographs and used to educate young generation about the need to promote and support reptile conservation. An educational film was also organized and young children were sensitized about reptile biology, ecology and effects of constant interference/disturbance/fragmentation of their habitats.

During the study, it was noted that Kerio Valley is one of the regions recorded to have high fatalities of snake bites in Baringo County. Hence, our education programs involved the young scholars in education about venomous and non-venomous snakes, about emergency and first-aid in case of snakebites and how to avoid.



Young scholars watching documentary about snakes and snake bites. They were also lectured and sensitized about snake biology, ecology and about constant disturbance/fragmentation of their habitats

NB: There is need for more research especially on the following key areas concerning reptiles in Kerio Valley:

- a) A study on anti-venom production program to help reduce snakebite fatalities.
- b) Continuous education and awareness on first-aid in case of snake bites.
- c) Conservation education on the fragmentation, disturbance and interference of reptile habitats.

CASES OF SNAKE BITES IN BARINGO COUNTY

The following links obtained from media sources in Kenya confirm the need for studies on anti-venom production program to help reduce snakebite fatalities:

- 1) Shortage of anti-venom in Baringo leave victims crying for medical aid
<https://www.standardmedia.co.ke/article/2001294313/shortage-of-antivenom-in-baringo-leave-victims-crying-for-medical-aid>
- 2) Baringo father grieves after son, 7, dies from snake bite
<https://www.the-star.co.ke/news/2017/12/18/baringo-father-grieves-after-son-7-dies-from-snake-bite-c1686695>
- 3) Alarm as snake population soars in Baringo as anti-venom runs out
<https://citizentv.co.ke/lifestyle/alarm-as-snake-population-soars-in-baringo-as-anti-venom-runs-out-100645/>
- 4) 45-year-old man bitten to death by a Black Mamba in Baringo North
<http://www.kenyanews.go.ke/45-year-old-man-bitten-to-death-by-a-black-mamba-in-baringo-north/>
- 5) Snake bite menace: Middle aged man dies after being bitten by a black mamba in Baringo
<http://www.mediamaxnetwork.co.ke/483863/snake-bite-menace-middle-aged-man-dies-after-being-bitten-by-a-black-mamba-in-baringo/>
- 6) Medic: Number of snake bite cases increasing in Baringo
<https://www.standardmedia.co.ke/article/2000168683/medic-number-of-snake-bite-cases->