

**FOURTH BIODIVERSITY ASSESSMENT REPORT
OF OLARI NYIRO, LAIKIPIA NATURE CONSERVANCY, NORTHERN KENYA**

(Amphibians, Reptiles, Birds, Invertebrates and Plants)

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Executive Summary

We present an updated comprehensive biodiversity report (excluding mammals) of Ol Ari Nyiro (OAN), Laikipia Nature Conservancy (LNC) following a series of assessments by the National Museums of Kenya (NMK) since 2008. This report contains updates from study conducted from June 28 to July 9, 2013 including amphibians, reptiles, birds, plants, terrestrial and aquatic macro invertebrates. External parasites of birds were incorporated in the survey as an independent component for the first time. As mentioned above, this report does not include an account of the mammals. However, LNC has abundant populations mammals including elephant, lion, leopard and buffalo. The report is presented on each of the component surveyed as follows:- Chapter 1 – Reptiles and Amphibians; Chapter 2 – Birds; Chapter 3 – Ecto-parasites of Birds; Chapter 4 – Invertebrates and; Chapter 5 – Plants. Detailed findings are outlined in the respective chapters.

OAN-LNC stands out among other conservation areas in the greater Laikipia region for two main reasons. First, it remains the largest privately protected area in the area covering 400 km², encompassing the most diverse habitat types from grasslands, high forest to riverine vegetation. Secondly, it is the only conservancy in Laikipia without livestock, exclusively dedicated to nature conservation, following the complete eradication of cattle ranching in 1998. A dramatic improvement in biodiversity richness has been witnessed since then, with significant increase in vegetation cover. Located on the eastern wall of the Rift Valley, the Conservancy is the most important water catchment area for Lake Bogoria World Heritage Site, Lake Baringo and Lake 94, among other ecological benefits for the riparian community.

Besides the presence of a variety of large mammals, very high species diversity of relatively inconspicuous, but equally important biota has been documented in Laikipia Nature Conservancy, comprising of 14 amphibians (i.e. frogs and toads), 55 reptiles, 477 birds, more than 800 vascular plants- early research (Truman Young PhD, Colin Leakey, Ann Robinson PhD, Rob Brett Dr. Phil, Joshua Muasya, David Okebiro) stated that this represent ten percent of the estimated flora of the Republic of Kenya (Beentje, pers. comm.), and 755 macro-invertebrates. Four taxa of ecto-parasites (louse fly, lice, mites & ticks) have been recorded from birds. This significant species richness, in an area

surrounded by a highly degraded landscape, is directly correlated with the radical shift in management i.e. the removal of cattle and total dedication to nature conservation as a long term management strategy, which has resulted in recovery of species populations over time. To achieve this noble goal, the survival of these species, some of which are globally threatened with extinction, must be ensured through sustained management and supportive legislative framework. It is also worth noting that recent research from Ol Ari Nyiro has led to the discovery of species new to science; e.g. the newly described butterfly, *Aslauga gallmannae* Libert & Collins 2013 presently only known from the Engelesha forest and the *Aloe francombei*, only known from the Mukutan Gorge, “the most varied botanically non –forested area in East Africa.” (Truman Young, Phd)

The species inventory was discovered to be far from exhaustive as more new records were still being detected. It is important to note that the total list of species has been steadily increasing with each assessment conducted over the recent years. In the most recent assessment, a total of **59** new species were recorded in the conservancy. These included **1** snake, **7** birds, **43** invertebrates , **2** fish, and **6** plants.

Our findings underscore the state of this conservancy as a highly pristine ecosystem and its enormous potential to contribute to sustainable development and the ripple effect of improvement of livelihood in the area. The presence of some highly sensitive aquatic macro-invertebrates like the Stone fly *Neorperla kunensis*, Water penny beetle *Psephenus sp.*, and mayfly *Afronurus harrison* as well as various amphibians implied that the water quality was of the highest integrity score. With nearly 45% of Kenya’s bird species documented here, LNC is undoubtedly an important tourist destination as a bird watcher’s paradise. Moreover, lying along the Rift Valley; one of the prominent bird migration routes, LNC offers a critical passage and wintering habitat for a number of Palearctic migrants. On the other hand, the plant diversity in the area is potentially a huge reservoir for traditional health remedies.

Nevertheless, the results presented here only represent a small fraction of the entire area covered by the Conservancy, and large portions still remain to be studied in the future. It is envisaged that more species will certainly be detected in future surveys. LNC’s inventory is the only such comprehensive, detailed and diverse inventory in the entire Laikipia wildlife dispersal area and Kenya at large. It serves as a classic example of the

best approach since its only by understanding ecosystem dynamics, including species present, that we can employ effective and sustainable practices that benefit wildlife and humanity.

List of new species recorded in June/July 2013

Taxonomic Group	Binomial Name	Common Name
Snake	1. <i>Coluber keneinsis</i>	Kenya Flowered snake
Birds	2. <i>Coturnix coturnix</i>	Common Quail
	3. <i>Anas sparsa</i>	African Black Duck
	4. <i>Schoutedenapus myoptilus</i>	Scarce Swift
	5. <i>Pogoniulus leucomystax</i>	Moustached Tinkerbird
	6. <i>Psalidoprocne albiceps</i>	White-headed Saw-wing
	7. <i>Apalis cinerea</i>	Grey Apalis
	8. <i>Calamonastes simplex</i>	Grey Wren Warbler
Invertebrates	9. <i>Hydroglyphus infirmus</i>	Predacious water Beetle
	10. <i>Laccophilus incrassatus</i>	Predacious water Beetle
	11. <i>Hydaticus matruelis</i>	Predacious water beetle
	12. <i>Globaria subaenea</i>	Gyrinidae beetle
	13. <i>Sternolophus angolensis</i>	water scavenger beetle
	14. <i>Parecnomina sp</i>	Caddis fly
	15. <i>Laccocoris limigenus</i>	Creeping water bugs
	16. <i>Anisops pellucens</i>	Common back-swimmer
	17. <i>Enithares sobria</i>	Backswimmer
Scorpion	18. <i>Ranatra cinnamomea</i>	Stick water scorpion
	19. <i>Telagonidae sp</i>	Mayfly
	20. <i>Culicoides sp</i>	Biting midges
	21. <i>Tabanus sp</i>	Horseflies
Millipede	22. <i>Wajirinus gracilepis</i>	Flat millipede
	23. <i>Procambarus clarkii</i>	Louisiana crayfish
	24. <i>Potamonautes neumanni</i>	Freshwater Crab
Fish	25. <i>Barbus neumayeri</i>	Cyprinid
Fish	26. <i>Oreochromis niloticus</i>	Tilapia
Leeches	27. <i>Erpobdellidae sp</i>	Leeches
	28. <i>Lumbricus sp</i>	Aquatic earthworms
	29. <i>Lumbricidae sp</i>	
	30. <i>Burnupia crassistriata</i>	Limpets
	31. <i>Pisidium sp</i>	Pill clams Bivalve
Terrestrial snails	32. <i>Chlamydarion oscitans</i>	Terrestrial snails
	33. <i>Limicolaria martensiana</i>	Terrestrial snails
	34. <i>Gullela funera</i>	Terrestrial snails
	35. <i>Opeas marsabitensis</i>	Terrestrial snails
	36. <i>Trachycysti ariel</i>	Terrestrial snails
	37. <i>Trochonanina densestriata</i>	Terrestrial snails
	38. <i>Rachidina cf virginea</i>	Terrestrial snails
	39. <i>Rachidina chiradzuluensis</i>	Terrestrial snails
	40. <i>Edourdia tumida</i>	Terrestrial snails
	41. <i>Cerestua baringi</i>	Terrestrial snails
	42. <i>Halolimnohelix iredalei</i>	Terrestrial snails
	43. <i>Halolimnohelix planulata</i>	Terrestrial snails
	44. <i>Vicariihelix keniensis</i>	Terrestrial snails
	45. <i>Pseudoglessula boivini</i>	Terrestrial snails

	46. <i>Pseudopeas rumurutiensis</i>	Terrestrial snails
	47. <i>Pseudoglessula conradti</i>	Terrestrial snails
	48. <i>Trochonanina keniana</i>	Terrestrial snails
	49. <i>Blepisanis coerulea</i>	
Bugs and Beetles	50. <i>Dactylispa sp</i>	Leaf beetle
	51. <i>Solenostethium liligerum</i>	Shield bug
	52. <i>Deroplax silphoides</i>	
	53. <i>Callidea bohemanni</i>	Shield bug
Plants	54. <i>Egeria densa</i>	Hydrocharitaceae
	55. <i>Impatiens sp.</i>	Balsaminaceae
	56. <i>Isolepis fluitans</i>	Cyperaceae
	57. <i>Sopubia ramosa</i>	Scrophulariaceae
	58. <i>?Ceratophyllum sp.</i>	Ceratophyllaceae
	59. <i>Aponogeton sp.</i>	Araceae

CONSERVATION STATUS

The following **seven birds** found in Laikipia Nature Conservancy are **globally threatened with extinction** under the IUCN Red List of Threatened species (numbers as per LNC list of birds in this report):-

- 48` Madagascar Pond Heron *Ardeola idea* **EN**
- 63 Lesser Kestrel *Falco naumanni* **Vu**
- 79 Egyptian Vulture *Neophron percnopterus* **EN**
- 83 White-headed Vulture *Trigonoceps occipitalis* **Vu**
- 113 Crowned Eagle *Harpyhaliaetus coronatus* **EN**
- 124 Grey Crowned Crane *Balearica regulorum* **EN**
- 335 Great Reed Warbler *Acrocephalus arundinaceus* **EN**