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SURVEY OF WOODY FLORA AND FAUNA OF THE BAHIR DAR UNIVERSITY MAIN CAMPUS: a showcase for the need of conservation.

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Abstract: The aim of this project was to survey the flora and fauna of the main campus of Bahir Dar University. It was necessary because the university campus is relatively well rehabilitated and it is very important that the composition of the vegetation, the regeneration capacity of the vegetation and the importance of the tree species to supporting animals are studied. The fact that the area is serving as a safe haven to the surrounding animals, both diurnal and nocturnal ones are known to live in this rehabilitated area. A general plant and animal cross-sectional survey was conducted in 2005/2006. The study on vegetation was limited to shrubs and trees. Sixty-four tree and shrub species belonging to 34 families were identified. The surveyed fauna were mammals, reptiles, amphibians, and birds. More than 80 species of birds were recorded in this relatively protected ecosystem.

INTRODUCTION

Bahir Dar University (BDU) situated in Bahir Dar Town, the capital of the Amhara National Regional State, is one of the nine prominent Universities in Ethiopia. It is located at the southern shore of Lake Tana, the largest lake in the country (Fig. 1). The University was established by merging the former Bahir Dar Teachers College, which was under Addis Ababa University, and the former Polytechnic Institute, which was under Commission for Higher Education. The main campus of the university is located south-east of the town where the former Bahir Dar Teachers College was situated. Bahir Dar Teachers College, the then Academy of Pedagogy, was established in 1972 by the tripartite agreement of the Imperial Government, UNESCO and UNDP and started its actual work in the following year under the auspices of the Ministry of Education and Fine Arts (http://www.bdu.telecom.net.et). The general objectives, as shown in the university website (http://www.bdu.telecom.net.et), were to train multipurpose primary education professionals so as to make them capable of adopting primary education to rural life and rural development. Soon after it's beginning, however, the program focused on offering pedagogy as a major area of study and Amharic, English, Geography and Mathematics as minor courses. Later, diploma programs were introduced when in 1996 the diploma offering

departments were raised to the degree level. Finally, the present institution, BDU, was inaugurated in May 2000 by the merger of the two pioneer institutions, Bahir Dar Teachers College and Polytechnic Institute. The University now has five Faculties and is to increase to more than six when the ongoing feasibility studies on opening Medical Faculty and Water Technology Faculty are finalized.

Unlike the surrounding area where deforestation is high and the land is near to becoming bare, the main campus of BDU is relatively vegetated by indigenous and exotic vegetation. The planting of exotic vegetation was started in 1975 by the then Head of Campus Reafforestation group. Almost all the indigenous vegetation might be a self-regenerated one. Now-a-days, the university campus is well rehabilitated and it is very important that the composition of the vegetation, the regeneration capacity of the vegetation and the importance of the tree species to supporting animals are to be studied. The fact that the area is serving as a safe haven to the surrounding animals; there are both diurnal and nocturnal ones. This study includes also these animals. The specific objectives of the study were therefore:

- to enumerate the shrub and tree plant species that compose the campus vegetation.
- to differentiate the exotic species and evaluate their adaptation.
- to study the food value of the vegetation to birds and mammals.
- to enumerate the bird and mammal types sheltered in the semi-forest vegetation of the campus.
- to identify the plant species to their family level.

Why Were We Concerned on the Flora and Fauna of the University Main Campus?

Both plants and animals are the basis for our survival. We need to study them and take necessary measures in maintaining the ecological balance of the region. Such a measure should begin from the immediate environment and, hence, from our campus flora and fauna. Plants and animals are sources of food, shelter and clothing. A healthy ecosystem is built when it is maintained in a sustainable manner. By showing how this very small relatively rehabilitated area, usually disturbed by students, is serving as a safe haven to considerable

number of animal and plant species, it is possible to show the necessity of delimiting land for the purpose of plant and animal conservation.

METHODOLOGY

The study site was Bahir Dar University Main Campus, which is located 11^0 38' north and 37^0 10' east (Fig. 1). It is situated at about 1800 meters above the sea level (masl.) Inventory of all tree and shrub vegetation was done from August 2005 to January 2006 so as to include all plants that flower at different times. Local names were identified by the help of a group of biology 3rd year students who came from the countryside and also by local elders. Those exotic ones were differentiated by studying the history of their plantation and also by asking local inhabitants for their possible existence in the locality before. The identification of each plant up to the family level was done in the Addis Ababa University Herbarium. Whether each plant species is edible or not by animals and/or by humans was done by asking the 3rd year Biology students, the local elders, a colleague who served more than twenty years as adult educator and an income generating head, who was an agriculture diploma graduate with more knowledge about local vegetation of the University Main Campus. The adaptability of the exotic species and their effect on the indigenous species was studied by evaluating their *in situ* growth status and their effect on health status of the under-growing indigenous species.

Prevalence of the animal species sheltered in the relatively protected campus vegetation was done generally as "present or absent". Our emphasis was on amphibians, reptiles, birds and mammals. Observation of large animals such as mammals was performed by using line transect method between 200m and 400m depending on the type of vegetation that cover the area. In order to collect data on animal population, the study site was divided into five zones (Zone 1 - 5). Information about the diversity of birds was collected and different species of birds were identified using a guidebook of birds of Eastern Africa (Perlo, 1995). Survey on amphibians and reptiles in the campus was done by direct observation during the study period.

The study on fauna was conducted both in dry and wet seasons. The dry season data was collected during January, February and March and data for the wet season was collected

during June, July and August in the year 2005/ 2006. Animals' activity, habitat, species seen and other essential information were recorded especially for mammals. Indirect evidences such as animal feces, hairs, and burrows were used in order to collect data on the presence of some cryptic animals such as porcupines in the study area.

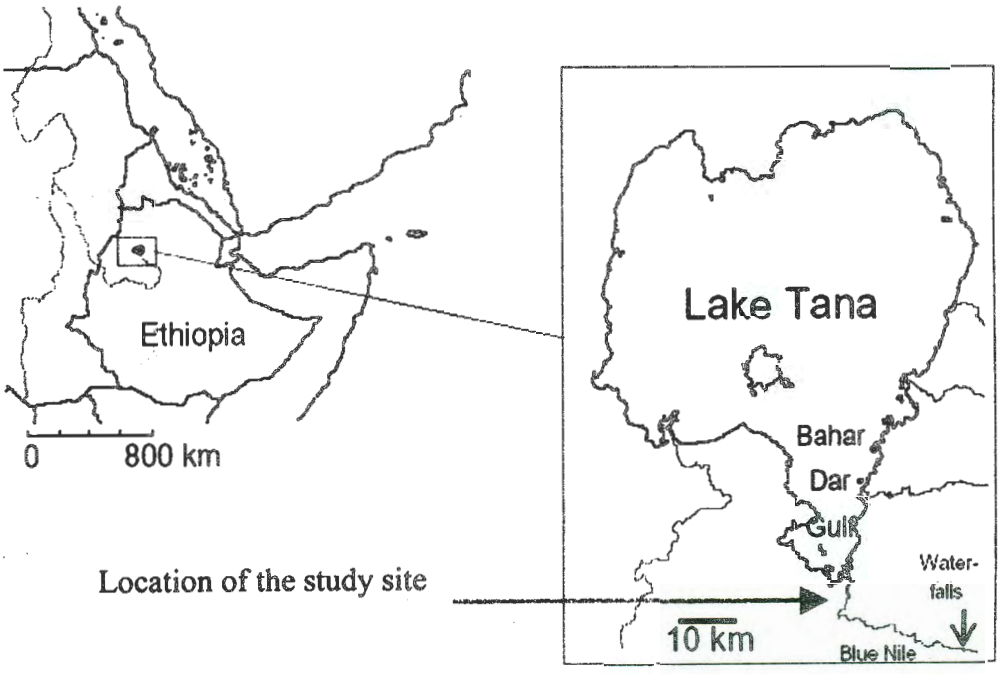

Figure 1. Lake Tana, the Mouth of the Blue Nile, located in northwest of Ethiopia. The main tributaries of the lake which supplies 85% of the water to Nile River, and the location of Bahir Dar University main campus (solid long arrow), are shown. (Figure adapted from Tesfaye Wudneh, 1998).

RESULTS AND DISCUSSION

Woody Flora of the Bahir Dar University Main Campus

A. Species' Richness

A plant checklist of all the shrub and tree species surveyed is shown on table 1. A total of 63 woody species (woody climbers not included) belonging to 34 families is recorded. Of the total 63 species found, 40 were tree species while 23 were shrubs. The families with significant number of species were Fabaceae (11 species), Moraceae (6 species), Bignoniaceae and Myrtraceae (4 species each), Euphorbiaceae, and Flacortiaceae (3 species each) (Table 2). The species composition percentage is shown in table 2.

Table 1. List of the tree and shrub vegetation of the Bahir Dar University Main Campus.

No.	Scientific Name	Family	Habit	Vernacular Name (Amharic)
1.	*Acacia siberana* DC.	Fabaceae	Tree	Girar
2.	*Acacia sps.*	Fabaceae	Tree	Hurgoro
3.	*Albizia* Sps.	Fabaceae	Tree	-
4.	*Calpurnia aurea (Ait.) Benth.*	Fabaceae	Shrub	Digita
5.	*Caparis tomentosa* Lam.	Caparidaceae	Tree	Gimero
6.	*Carica papaya L.*	Caricaceae	Tree	Papaya
7.	*Carissa spinarum* L	Apocynaceae	Shrub	Agam
8.	*Casuarina equistifolia* L.	Casuarinaceae	Tree	Arzelibanos
9.	*Citrus sinensis* L. Osb.	Rutaceae	Tree	Burtukan
10.	*Coffea Arabica* L.	Rubiaceae	Shrub	Buna
11.	*Combretum molle* G. Dom	Combertaceae	Tree	Abalo
12.	*Cordia africana* L.	Boraginaceae	Tree	Wanza
13.	*Croton macrostachyus* Del.	Euphorbiaceae	Tree	Bisana
14.	*Cupressus lusitanica* Mill.	Cupressaceae	Tree	Yeferenj tid
15.	*Cussonia ostinii* Chiov.	Araliaceae	Tree	-

No.	Scientific Name	Family	Habit	Vernacular Name (Amharic)
16.	*Delonix regia (Boj. ex Hook.)* Ref	Fabaceae	Tree	Yedredawa zaf
17.	*Dodonia angustifolia* L. F.	Sapindaceae	Tree	Kitkita
18.	*Dovialis abyssinica* (A. Rrich) Warb.	Flacortiaceae	Shrub	Koshim
19.	*Entanda abyssinica* Stud ex A. Rich	Fabaceae	Tree	-
20.	*Erythrina abyssinica* Schweinf.	Fabaceae	Tree	Korch
21.	*Eucalyptus sp.*	Myrtaceae	Tree	Baihr zaf
22.	*Eucalyptus sp.*	Myrtaceae	Tree	Baihr zaf
23.	*Euclea shchimperi* (A. Dc.) Dandy	Ebenaceae	Shrub	Dedeho
24.	*Euphorbia pulcherrima* Klotzslh	Euphorbiaceae	Shrub	-
25.	*Ficus ovata* Vahl	Moraceae	Tree	Boza
26.	*Ficus sp.*	Moraceae	Tree	-
27.	*Ficus sp.*	Moraceae	Tree	Bamba
28.	*Ficus sycomorus* L.	Moraceae	Tree	Bamba
29.	*Ficus thonningii* Blume	Moraceae	Tree	Chbaha
30.	*Ficus vista* Forssk.	Moraceae	Tree	Warka
31.	*Flecourtia indica* (Durm. F.) Merrill	Flacortiaceae	Shrub	Yenebir Tifir
32.	*Flueggea virosa* (willd)Vogl.	Flacortiaceae	Shrub	Wonaye
33.	*Gardenia ternifolia* Schumech & Thann	Rubiaceae	Shrub	Gambilo
34.	*Grevillia robusta* R. Br.	Proteaceae	Tree	-
35.	*Grewia feruginea* Hochst ex A. Rich	Tiliaceae	Tree	Lenkota
36.	*Hibiscus rosa-sinensis L.*	Malvaceae	Shrub	Hibisk
37.	*Hilinus mystecinus* (Ait.) E. May	Rhemnaceae	Shrub	-
38.	*Jacaranda mimosifolia* D. Pon.	Bignoniaceae	Tree	Jacranda
39.	*Lannea schimperi* (A. Rich) Eng.	Fabaceae	Tree	Ayderkea
40.	*Lantana camara* L.	Verbenaceae	Shrub	Yeregna kolo
41.	*Mangifera indica* L.	Anacardiaceae	Tree	Mango

No.	Scientific Name	Family	Habit	Vernacular Name (Amharic)
42.	*Maytenus gracilipes* (Welu. Ex Oliv) Excell	Celastraceae	Tree	Atat
43.	*Melia azedarachta* A. Juss.	Miliaceae	Tree	Niime
44.	*Panicum grantum* L.	Lythraceae	Tree	Roman
45.	*Persea Americana* Mill	Lauraceae	Tree	Avocado
46.	*Phoenix sp.*	Arecaceae	Shrub	Zembaba
47.	*Phytolaca dodecandra* L'Herit	Phytolacaceae	Shrub	Endod
48.	*Piliostigma thonningii* (Schumsch) M-Rich	Fabaceae	Tree	Dawdi
49.	*Premna schimperi* Engl.	Verbenaceae	Shrub	Chocho
50.	*Prunus africana* (*Hook. F.*) *Kalkm*	Rosaceae	Tree	Tikur inchet
51.	*Psidium guajava* L.	Myrtaceae	Tree	Zeituen
52.	*Rhus vullgaris* Meikle	Anacardiaceae	Tree	Kemo
53.	*Ricinus communis* L.	Euphorbiaceae	Shrub	Gulo
54.	*Rubus apetalus* Poir.	Rosaceae	Shrub	*Enjorii*
55.	*Salvia leucantha* Cav.	Lamiaceae	Shrub	Anfar
56.	*Sesbania sesban* (L.) Merr.	Fabaceae	Shrub	Sesbania
57.	*Sinna bicapsularis* L.	Fabaceae	Shrub	Bishbisha
58.	*Stegenotenia araliacea* Hochst. ex A. Rich.	Apiaceae	Tree	Gedel Amuk
59.	*Stereospermum kunthianum* Cham.	Bignoniaceae	Shrub	Zana
60.	*Syzigium guineense* (Willed) DC.	Myrtaceae	Tree	Dokema
61.	*Tecoma stans* (L.) Kunth	Bignoniaceae	Shrub	-
62.	*Vernonia amaygidalina* Del.	Asteraceae	Shrub	Girawa
63.	*Spathodea campanulata* P. Beauv.	Bignoniaceae	Tree	-

Table 2. Number of Woody Vegetation Families in the Bahir Dar University Main Campus.

No.	Family	No. Spp	Percentage (%)
1.	Anacardiaceae	2	3.17
2.	Apiaceae	1	1.58
3.	Apocynaceae	1	1.58
4.	Araliaceae	1	1.58
5.	Arecaceae	1	1.58
6.	Asteraceae	1	1.58
7.	Bignoniaceae	4	6.35
8.	Boraginaceae	1	1.58
9.	Caparidaceae	1	1.58
10.	Caricaceae	1	1.58
11.	Casuarinaceae	1	1.58
12.	Celastraceae	1	1.58
13.	Combertaceae	1	1.58
14.	Cupressaceae	1	1.58
15.	Ebenaceae	1	1.58
16.	Euphorbiaceae	3	4.76
17.	Fabaceae	11	17.46
18.	Flacortiaceae	3	4.76
19.	Lamiaceae	1	1.58
20.	Lauraceae	1	1.58
21.	Lythraceae	1	1.58
22.	Malvaceae	1	1.58
23.	Miliaceae	1	1.58
24.	Moraceae	6	9.52
25.	Myrtaceae	4	6.35
26.	Phytolacaceae	1	1.58
27.	Proteaceae	1	1.58
28.	Rhemnaceae	1	1.58
29.	Rosaceae	2	3.17
30.	Rubiaceae	2	3.17
31.	Rutaceae	1	1.58
32.	Sapindaceae	1	1.58
33.	Tiliaceae	1	1.58
34.	Verbenaceae	2	3.17
	Total	63	Rounded to 100%

Table 3. Frequency and edibility of the dominant plant species growing in the Bahir Dar University main campus.

No.	Vernacular Name	Scientific Name	Frequency	Edibility
1	Grar	*Acacia sp.*	163	Edible by ruminants
2.	Nyme	*Aazedirachta indica*	140	Not edible
3.	Gimero	*Caparis tomentosa*	607	Edible by birds
4.	Bahir Zaf	*Eucalyptus sp.*	2526	Not edible
5.	Gambilo	*Gardenia ternifolia*	180	Edible by animals
6.	Yeregna Kolo	*Lantana camara*	170	Edible by animals
7.	Bisana	*Croten macrochytus*	90	Not edible
8.	Abocado	*Presea Americana*	79	Edible by animals
9.	Gravillia	*Gravilla robustus*	80	Not edible
10.	Bamba/Warka	*Ficus sp.*	70	Edible
11.	Korch	*Erythrina bruci*	310	Not edible
12.	Bishbisha	*Sinna bicapsularis*	103	Not edible
13.	Digta	*Calpumia aurea*	515	Edible by animals
14.	Buna	*Coffee sp.*	850	Edible
15.	Jakaranda	*Jacaranda mimosifolia*	911	Not edible
16.	Gullo	*Ricinus communis*	453	Edible (oil extract)
17.	Mango	*Mangifera indica*	75	Edible
18.	Shewshewie/ Erzelibanos	*Casuarina equistifolia*	412	Not edible
19.	Wanza	*Cordia africana*	509	Edible
20.	Agam	*Caris spinarum*	99	Edible
21.	Lenquata	*Grewia feruginea*	452	Edible
22.	Zana	*Stereospermum kunthianum*	111	Edible by animals
23.	Checho	*Premna schimperi*	990	Edible
25.	Kimo	*Rhus vulgaris*	485	Edible
26.	Girawa	*Vernonia amygidalina*	842	Not edible
27.	Sensel	*Albizia schmperiena*	155	Edible by animals
28.		*Hilius mystecinus*	390	????
29.		*Tecoma stans*	376	Not edible

Fauna of the Bahir Dar University Main Campus

Our intention in this part of the study was to see the influence of the relative protection animals got from the relatively rehabilitated vegetation of the university campus. This is very important to understand the utilization of the habitat in order to predict the environmental impact assessment, for proper management of the wildlife population and to take appropriate conservation measures and for estimating the ecological, environmental and

take appropriate conservation measures and for estimating the ecological, environmental and welfare issues in general. Our survey study was limited to amphibians, reptiles, birds and mammals simply for the sake of convenience.

Amphibians

Frogs were usually crepuscular animals observed in cold weather condition around the damp area of the study site. They were not commonly found in dry weather condition particularly at noon and when observed they were solitary and rare.

Reptiles

Reptiles such as snakes, lizards and chameleons were common in the study site. Snakes were diurnal reptiles, which were preferably found on rocky habitat. They were observed on sunny weather conditions. Since the snakes were fast runners it was not possible to observe the characteristic features of these animals. They were of different colors, mostly brownish and greenish with shiny scales (Fig. 2).

Figure 2. Differently colored snakes from Bahir Dar University Main Campus. Photographed in September 2006.

Chameleons were diurnal and solitary animals observed in the forest habitat. They were seen at moderately dry weather condition. They could conceal themselves or camouflage with the surrounding environment and it was very difficult to observe them even at a closer distance. Lizards were also diurnal and solitary animals, which were seen in open habitat particularly in stony areas.

Birds

Since the study area is closely linked to Lake Tana and the Blue Nile, one of the important bird areas of Ethiopia, diversified species of birds were found through out the study period. They were observed during feeding, courtship display and flying. Eighty-nine species of birds were identified during the study period (Table 4). One of the species identified, Wattled Ibis (*Bostrychina carunculata)*, is registered as rare bird species of Ethiopia as well as endemic species to both Ethiopia and Eritrea. Moreover, the Black- winged Lovebird (*Agapornis tarana*) is one of the sixteen endemic bird species of Ethiopia. As could be seen in table 4, only the scientific names are given because it was not easy to find the vernacular names to all these species. Some representative species of the dominant ones are shown in fig. 3 below.

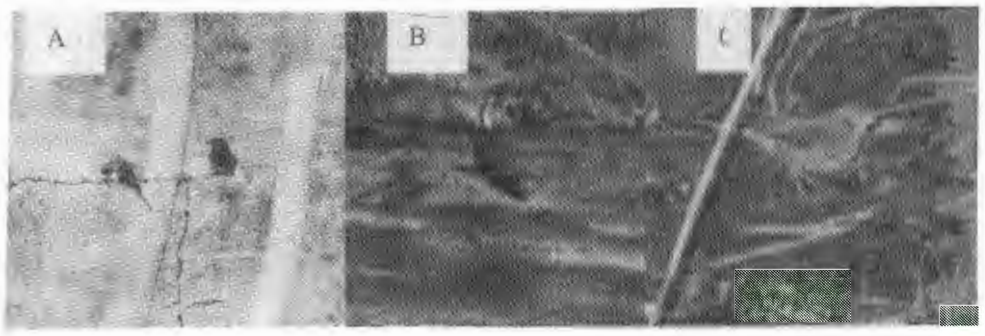

Figure 3. Representative sample species of birds observed in Bahir Dar University Main Campus.

A) Baglafecht weaver (*Ploceus baglafecht*), B) African Darter (*Anhinga rufa*),

C) Red-cheeked Cordon-Bleu (*Uraeginthus bengalus*). Photographed in October 2005.

Mammals

Population surveys of animals, especially mammals, are important in understanding how their population is varying while facing anthropogenic disturbances. It is especially important to know the status of:

1. endangered species, which may be declining in number.
2. abundant species, which may be increasing in number.

3. those hunted for food or for other purposes.
4. those economically important or dangerous etc.

Such studies enable us to take necessary managerial steps. Those endangered could be protected, those abundant could be culled, and those hunted or economically important might be sustained for use.

Different types of wild mammals such as bats, rats, mongooses, rabbits, porcupines, and monkeys were observed in the Campus during the study period. Domestic mammals of different groups were also commonly observed in the study site and of these domestic cattle were significantly large. The university and the surrounding dwellers owned these cattle. The brief feature of each mammal was described as given below:-

1. **Bats:** were nocturnal. They came out at night and roosted in the dark places. They lived mostly in buildings of the university but also on a few hallow trees.
2. **Porcupine:** were active at night (nocturnal). They usually lived in underground holes or in the basements of university buildings. The Porcupines were solitary when they hunt their food.
3. **Rabbits:** were diurnal animals, which hide themselves in the grass while seeing the visitor. As they were fast runners, it was difficult to study some of their features such as sex and other unique morphological features.
4. **Mongooses**: Though it was very difficult to count their numbers and other characteristics, they were abundant during the night. They usually moved in pairs. Whether the roaming pairs were sexual mates or not was not clear.
5. **Rats:** were active throughout the whole day, especially during the day light hours. They hide themselves in the ground or easily escape. They mainly fed on grasses and the left over food.
6. **Monkeys:** were diurnal and usually they were very active at dawn and in the morning. There were many mated pairs, and males had colorful hair on the scrotum. In most males the sex organs were seen erected early in the morning. They showed a multi male-multi female social organization where a group of these arboreal mammals had 50 to 60 members. This group of mammals was restricted to the western part of the study site where the university staff members are residing. This probably is to avoid various anthropogenic disturbances in the area.

They are highly adaptable with human beings for common resources such as food. Those monkeys on fig. 4 are on the roof of the residential houses.

Figure 4. Monkeys in Bahir Dar University Main Campus residential area. Photograph Taken in October 2005.

7. **Cats:** Some wild cats are reported to live in the university campus. An adult male (unidentified) was killed by guards few years ago and two kittens were caught in November and December, 2006 near the biology laboratory and in a classroom. One of the kittens was captured by a technical assistant and it died after 5 days in captivity while the second was captured but released immediately. The writers of this paper were not, however, successful in getting their pictures.

Table 4. Bird species identified in Bahir Dar University Main Campus during the Study period

No.	English Common name	Scientific name
1	White-breasted Cormorant	*Phalacrocorax carbo*
2	Reed Cormorant	*Phalacrocorax africanus*
3	African Darter	*Anhinga rufa*
4	Cattle Egret	*Bubulcus ibis*
5	Grey Heron	*Ardea cinerea*
6	Black-headed Heron	*Ardea melanocephala*
7	Hammerkop	*Scopus umbretta*
8	Sacred Ibis	*Threskiornis aethiopicus*
9	Glossy Ibis	*Plegadis falcinellus*
10	Hadada Ibis	*Bostrychina hagedash*
11	Wattled Ibis (rare)	*Bostrychina carunculata*
12	White-backed Duck	*Thalassornis leuconotus*
13	Egyptian Goose	*Alopochen aegyptiacus*
14	Spur-winged Goose	*Plectropterus gambensis*
15	Black Kite	*Milvus migrans*
16	African Fish Eagle	*Haliaeetus vocifer*
17	Hooded Volture	*Necrosyrtes monochus*

No.	English Common name	Scientific name
18	White-backed Volture	*Gyps africanus*
19	European Marsh Harrier	*Circas aeruginosus*
20	Augur Buzzard	*Buteo augur*
21	Spur-winged Plover	*Vanellus spinosus*
22	Speckled Pigeon	*Columba guinea*
23	Laughing Dove	*Streptopelia vinacea*
24	Cape Turtle Dove	*Streptopelia capicola*
25	Red-eyed Dove	*Streptopelia semitorquota*
26	Black-winged Lovebird (endemic)	*Agapornis taranta*
27	Marsh Owl	*Asio capensis*
28	Giant Eagle Owl	*Bubo lacteus*
29	Speckled Mouse bird	*Colius striatus*
30	Malachite Kingfisher	*Alcedo cristata*
31	Striped Kingfisher	*Halcyon chelicuti*
32	Pied Kingfisher	*Ceryle rudis*
33	Little Bee-eater	*Merops pusillus*
34	Abyssinian Roller	*Corocias abyssinica*
35	African Hoopoe	*Upupa epops*
36	Silvery-cheeked Hornbill	*Bycanistes brevis*
37	Black-billed Barbet	*Lybius guifsobalito*
38	Double-toothed Barbet	*Lybiu bidentatus*
39	Greater Honey Guide	*Indicator indicator*
40	Grey Woodpecker	*Mesopicos goertoe*
41	African Sand Martin	*Riparia paludicola*
42	Mosque Swallow	*Hirundo senegalensis*
43	European Crag Martin	*Hirundo rupestris*
44	African Rock Martin	*Hirundo fuligula*
45	Yellow Wagtail	*Motacilla flava*
46	African Pied Wagtail	*Motacilla aguimp*
47	Common Bulbul	*Pycnonotus barbatus*
48	West African Thrush	*Turdus pelios*
49	Olive Thrush	*Turdus olivoceus*
50	Ruppell's Robin-chat	*Cossypha semirufa*
51	Tawny-flanked Prinia	*Prinia subflava*
52	Dusky Flycatcher	*Muscicapa adusta*
53	Grey-headed Batis	*Batis orientalis*
54	Paradise Flycatcher	*Terpsiphone viridis*
55	White-rumped Babbler	*Turdoides leucopygius*
56	Scarlet-chested Sunbird	*Nectarinia senegalensis*
57	Tacazze Sunbird	*Nectarinia tacazze*
58	Montane White-eye	*Zosterops poliogaster*
59	Eastern Black-headed Oriole	*Oriolus larvatus*

No.	English Common name	Scientific name
60	Grey-backed Fiscal	*Lanius excubitoroides*
61	Fiscal Shrike	*Larvus collaris*
62	Northern Puffback	*Dryoscopus gambensis*
63	Black-crowned Tchagra	*Tchagra senegala*
64	Tropical Boubou	*Laniarius aethiopicus*
65	Forked-tailed Drongo	*Dicrurus adsimilis*
66	Pied Crow	*Corvus albus*
67	Black Crow	*Corvus capensis*
68	Fan-tailed Raven	*Corvus rhipidurus*
69	Greater Blue-eared Glossy Starling	*Lamprotonis chalybaeus*
70	Ruppell's long-tailed Starling	*Lamprotonis purpuropterus*
71	Violet-backed Starling	*Cinnyricinclus leucogaster*
72	Red-billed Oxypecker	*Buphagus erythrorhynchus*
73	Grey-headed Sparrow	*Passer griseus*
74	Baglafecht Weaver	*Ploceus baglafecht*
75	Spectacled Weaver	*Ploceus ocularis*
76	Village Weaver	*Ploceus cucullatus*
77	Yellow-mantled Whydah	*Euplectes macrourus*
78	Red-billed Firefinch	*Lagonosticta senegala*
79	Red-cheeked Cordon-bleu	*Uraeginthus bengalus*
80	Bronze Mannikin	*Lanchura cucullata*
81	Cut-throat Finch	*Amadina fasciata*
82	Village Indigobird	*Vidua chalybeata*
83	African Citril	*Serinus citrinelloides*
84	Yellow Rumped Serin	*Serinus leucopygius*
85	Eastern-grey Plantin-eater	*Crilifer zonurus*
86	Pin-tailed Widow	*Vidua macroura*
97	African Sand Martin	*Riparia paludicola*
89	European Sand Martin	*Riparia riparia*

CONCLUSIONS AND RECOMMENDATION

The Bahir Dar university main campus has been a higher learning institution for more than 30 years. In all these years, there has been no deforestation. Rather some exotic species were planted. Both the reafforestation of exotic plants and the regeneration of the local species made it a semi-protected area. Although there is high student population, with all the possibility of high animal habitat disturbance in the campus, certain species of animals managed to live at least in the periphery of the campus and in due course they got adapted to

the environment and made it their home. The cases of monkeys and mongooses are clear instances.

Most of the plant species growing in BDU campus serve multiple purposes. They protect the ecosystem from degradation and also are edible to animals, and they, thereby, serve as support system for the ecosystem. *Ficus* spp. and *Cordia africana* are cases in point. Few species, especially *Jacaranda mimosifolia*, have little role to play in the ecological support system. Other trees with higher economic value should, therefore, be planted replacing these plants.

Currently, there is largescale construction work going on in the campus. This is activity probably harmful to both the plant and animal species. While developing the infrastructure which is inevitable for a University, the flora and fauna resources should also get proper care and attention.

The Monkeys of the BDU campus have the natural right to live there, but their number has increased possibly more than the carrying capacity of the ecosystem. But these monkeys may be carriers of unknown diseases and, as they are living in the residence area of the campus, it could affect the health of the residents. The solution could be to establish a protected area on both the sides of the Abbay River to the east of the University campus so that they could shift their current habitat. Minimizing their number by trapping a few of them may also help in maintaining the optimum number of their population.

As shown by this study, the university campus is serving as safe haven to some animals and the vegetation cover in general is significantly improved. This strongly signals the necessity of delimiting the area, possibly on both the sides of the Abbay river on the eastern side of the campus, for conservation of both plants and animals. This protected area, in addition to its use value as *in - situ* conservation, would also serve as research and teaching site for students of Biology, Chemistry, Agriculture and Pharmacy.

It has become a common practice that certain plants in the campus are used for decoration purposes. The species thus used is, however, *Cupressus lusitanica*. This plant does not thrive in and around Bahir Dar. Many trials have been done before. All seedlings planted around the biology department by the biology staff, have died in about 2 years of planting.

The most drought resistant and easily adaptive plant for the Bahir Dar weather is *Tecoma stans*. This plant if properly handled is beautiful and could replace the purpose of *Cupressus sp.*

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