ETHIOPIAN WILDLIFE CONSERVATION AUTHORITY

CURRENT SPECIES COMPOSITION AND POPULATION SIZE OF THE WATER BIRDS OF ETHIOPIA AND CONSERVATION CHALLENGES OF THE MAJOR WETLAND HABITATS

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Photo Above: Partial View of wetland habitat in Atal Keme'a Flood Plain

1. INTRODUCTION

Ethiopia as a party to Multi Environmental Agreements (MEAs) such as the African Eurasian Migratory Water bird Agreement (AEWA) has showed strong commitment for the conservation of migratory water birds as a result initiated collecting data on the abundance, distribution and status of water birds found in the major wetlands of the country since 2011. An investigation for the updated information about the condition of the wetland habitats on which migratory and resident water birds live, feed and/or breed and the human activities which impose adverse effects on the survival of the water birds, which will help us in setting management options and strategies to conserve this diverse animal group have also been the main focus since then.

Water bird diversity and abundance in the country is high during the northern winter when resident water birds are augmented by palearctic migrants. Due to this, January counts are regularly done to get a good measure of data on the diversity, abundance and distribution of the water bird species existing in the major wetland habitats of the country and the highest number for each water bird species is counted during this period of the year. This year 27 wetlands were visited by the water bird census team which had a full coverage of the major wetlands of the country. The wetlands visited were scattered over the different parts of the country in four regional states namely, Oromia, Amhara, Tigray and Southern Nations, Nationalities and Peoples Regions known to have many important sites as stop over and feeding of many migratory water birds and feeding and breeding grounds for resident water birds. The census was conducted from 15 December 2018 -7January 2019 that took a total of 23 days covering a total distance 3,000 km.

2. OBJECTIVES OF THE STUDY

2.1.. To collect and collate annual count data on the diversity and abundance of waterbird species in general with an emphasis on migratory water birds of the country in particular.

2.2. To identify and collate major current conservation threats of wetland habitats of the country which are the breeding, feeding and stopover sites of the water birds to be presented to policy makers to be considered for appropriate decision making process.

3. MATERIALS AND METHODOLOGY

Different field equipment which assists in collecting reliable count data has been used in the census work. Binoculars, spotting scopes, GPS, site maps of the census areas and field data collection forms were the main materials used for the census work. The method which was used in the census of the water birds is a real count method. This real count method is used in all the wetlands across the country in the same way along well established transects which were also used in the previous years. This method was applied in counting all the water bird species found in that specific wetland with the purpose of measuring their diversity, abundance and distribution of each species.

4. BIOPHYSICAL CHARACTERISTICS OF WETLANDS SURVEYED IN 2019

4.1. Gefersa Water Reservoir

This wetland found 18 km west of Addis Ababa is created for use as a source of drinking water for Addis Ababa City. It is found at the geographical co-ordinates of N09°04′19.9″ E038° 37′ 46.3″ and has an altitude of 2,589m above sea level. The area of this reservoir is 7 square kilometers. Currently the wetland has low disturbance from human interference because of the protection provided by the government. However, siltation is the most important threat of the reservoir. It is a habitat of migrant water birds like Eurasian Teal, Northern Pintail, different species of Sandpipers and resident water birds like Sacred Ibis and Egyptian Goose. Real count of birds of the whole reservoir is done every year. The lake contains a significant population of Egyptian goose with a total count of 658 individuals.

4.2. Berga Marsh

Berga marsh is found 60km west of Addis Ababa close to a small town named Inchini. The wetland is situated at the geographical co-ordinates of N09° 16′ 15.8″ E 038° 23′ 26.9″ and altitude is 2,586m above sea level. It is a critical site for the breeding of the critically endangered White-winged Fluff-tail. It is fulfilling the critical habitat criterion because of the presence of Wattled Crane, Yellow-billed Duck and Spot-breasted Lapwing. In addition to this, it is also a feeding and living habitat for many migrant and resident water birds. Among the migrants Common Teal, Green Sandpiper and Northern Pintail are frequently encountered during the counting periods. Wattle Ibis and Blue-winged Goose comprise the highest population count every year and this year a total of 673 and 133 Wattled Ibis and Blue- winged Goose were counted respectively. Despite its great ecological significance for many water birds the area is engulfed by many conservation problems like overgrazing, unsustainable cultivation of the wetland

habitat, siltation of Berga River and competition for land by the local people which indicates the level of high disturbance as a result of which is drying very rapidly in recent years. The area of the wetland is estimated at 5 square kilometers or 500 hectares.. A total of 8.13km transect length has been taken at regular basis to count the water birds found in the area and the GPS co-ordinates at the start of the shore length is **X=422991 Y=1024703** and the GPS co-ordinate at the end of the shore length is **X= 435633 Y=1027072**

4.3. Chefa Flood Plain

It is a wetland formed as a result of water accumulated on artificially created flat ground during the longest rainy season in the country and it has a shallow depth only lasting for about seven months of the year which ultimately dries up in the middle of the high temperature season. It is found 1.5 km north of Debre Zeit or Bishoftu town at co-ordinates N 08° 48' 00.0" E038° 59' 54.2" and its area is estimated at 0.5 sq. km. It is a site where common cranes, ducks and waders regularly seen with good concentration. e at the end of the shore length is **X= 435633 Y=1027072** .

4.4. Chelekleka Flood Plain

It is formed in the same way as chefa flood plain with rain water accumulated on a seemingly artificially created flat ground containing much water during the longest rainy season in the country and it lasts for about six to 9 months that differs depending on the amount of rain in the previous rainy season and the rate and magnitude of water abstraction by the local people who are using for growing market oriented vegetables. Its current area is estimated at 0.98 sq.km receding 2.57sq.km from its original area 3.59 sq.km in 1991 and even much worse it has shrank by 1 sq.km until 2011. This wetland is also found close to the town of Debre Zeit or Bishoftu 45 km from the country's capital Addis Ababa at the geographical co-ordinates of N 08° 46′ 0.92″ and E38° 58′ 24.88″.The altitude of the area is 1,888m. It supports a high concentration of water birds including thousands of migrating common cranes, Northern Shovelers and Northern Pintails, waders and resident bird species like Cattle Egret, Sacred Ibis, Marabou Stork, Egyptian Goose and Spur-winged Goose.

4.5. Green Lake

It is a crater lake found 8 km. south of Debre Zeit or Bishoftu town at geographical co-ordinates of N 08° 41' 35.1" E38° 58' 46.5" at the edge of the rift valley. The altitude of the area is 1,862m. It has an area of 0.5sq.km. It is a deep lake with a maximum depth of 32mts. In the past, the lake was famous for a high concentration of lesser flamingos. However, recent regular surveys do not show the significance of the lake as a good site for the Lesser Flamingoes because of a change in the water quality of the lake and high disturbance from local people. It holds only a few species of water birds mainly ducks and small number of Lesser Flamingos. Over the last two years there are a good Northern Shoveler counts with a total of 1,500 individuals using the lake as feeding ground.

4.6. Cuba Dam

It is found 6km north east of Debre Zeit or Bishoftu town situated at geographical co-ordinates of N 08 °50' 07.4" E 039° 02' 15.8" and has an area of 1sq.km. It is a lake formed as a result of a dam from a river found near by the upper catchment. It is a lake with a good diversity of water birds like ducks, waders, pelicans and geese but with low abundance. It is a permanent shallow lake which is an ideal feeding and roosting site for both resident and migrant water birds. The lake is rapidly decreasing in size from year to year because of the irrigated agriculture surrounding the lake and the water abstraction upstream for the same purpose

4.7. Kilole Lake

It is also one of the wetlands around Debre Zeit or Bishoftu town which is found 12km north east of the town and its geographical co-ordinates are N 08° 47' 53.2" E 39° 05' 05.8". Its area is 2 sq. km. It is a lake with a better concentration of Red knobbed coots and Egyptian geese than any other species of water birds. It also supports some duck species and other waders. It was an important breeding lake for Red-knobbed Coots and Great-crested Grebes. However, this year we have witnessed a lot of negative changes in the bird habitats of the lake and no indication of breeding was observed with all the suitable habitats disappeared as a result of unchecked human activities along the lake shore such as irrigation. The abundance and diversity of the water birds of the lake is also diminishing from time to time. The only good bird population is the Egyptian Goose with a total count of 685 birds.

4.8. Lake Koka

It is an artificial lake made by the dam of the Awash River to generate electricity. It is found 93km south of Addis Ababa close to a small town called Koka. It is situated at the geographical co-ordinates of N 08° 21′ 55.1″E 038° 01′ 13.7″ and has an altitude of 1,540 meters above sea level. The entire area of the lake is estimated at 200 square kilometers. The wetlands formed surrounding the lake are important feeding and dwelling habitats of both migrant and resident water birds. It supports a good diversity of birds but a few populations. Regular counting transect has been established surrounding the lake which measures 6.9km and the GPS co-ordinates for the start of the shore length is **X=050238 Y= 0924954** and the GPS coordinates for the end of the shore length is **X=0502758 Y= 0925702**.

4.9. Lake Abijata

This is another rift valley lake found 200km from the capital Addis Ababa at a geographical location of N7 38 57.87and E38 3718.1 with an altitude of 1,573m. It was once named as the Ethiopian Lake Nakuru where one was able to watch spectacular number of flamingos and various species of other water birds. In this regard, the lake had great national and international significance as an important bird area and could

also have the potential to be designated as a Ramsar Site and World Heritage Site. Currently, however, because of the significant anthropogenic influences both at upper and in the lower catchments it has become a critically endangered lake and its famous name as "the paradise of Bird Watchers" has become under question and irreversible changes are taking place on the lake. These negative changes are forcing the lake to dry up and only 30km sq.km is remaining from its historical area of 201sq.km. Unless urgent remedial actions are taken the lake is drying up within 3 years.

4.10. Lake Zeway

This is the third largest of the Rift Valley Lakes which is very rich in water birds compared to other lakes which excels it in size. It has a total area of 442 sq. km found in southern part of the country 160 km from Addis Ababa .The nearest town to the lake is Zeway or recently also named as Batu town which is growing fast because of the establishment of extensive farms like the green houses for the production of flowers and small scale irrigations run by individuals. The lake is situated east of the town and it has a lot of swamps and marshes surrounding the lake which are very important feeding and roosting habitats for the water birds. The lake has also islands which are important for the roosting water birds like egrets and herons. The most important wetlands surrounding the lake are found in the western and south western parts of the lake which are regular sites of water bird counts. Current situation of the lake is very disappointing which has great threat of irreversible loss arising from unregulated act of using the lake water for industrial purposes and also plastic pollution

4.11. Lake Langano

This lake is also one of the biggest lakes in the rift valley system of Ethiopia with an unusually reddish brown water color because of its geological formation. It is found 200km from Addis Ababa close to one of the national parks of the country Abijata-Shalla Lakes National Park. Geographically, it is located at the co-ordinates of N07° 032′ 18″ E038° 41′ 05.4″. It has a total surface area of 241 square kilometers and it is a feeding and roosting site of birds like the Grey-headed Gulls, Cormorants, Herons and Pelicans. Its altitude is 1,586m above sea level. Regular counting sites have been established in the area where high concentration of water birds have been known for a long time and the name of these sites are located in the western and southern portion of the lake and they are named Hada Hora Kedo and Hada Boso localities respectively with reference to the aforementioned geographical directions. The wetlands surrounding the lake are deteriorating from year to year and this year it was noticed as it was highly degraded with no chance of return because of the various negative impacts imposed on the lake.

4.12. Lake Awassa

Lake Awassa is one of the lakes in the Rift Valley system of Ethiopia found 270km from Addis Ababa close to one of the largest cities in the country, Awassa city. Geographically it is located at the co-ordinates of N07° 02′ 26.6″ E038° 23′ 20.2″ and has an altitude of 1,683m. It has the most bird diversity where 70 species of water birds used to be recorded every year. It has a total surface area of 90 square kilometers

according to the last measurement taken in 2016 and its altitude is 1,680m above sea level. Maximum depth is 23meters and minimum depth is 10.7 meters. There are 11 localities which are permanently established to count water birds every year. These localities are named Werancha, Tulu, Finchawa, Jara Damewa. Kareso Dela, Sama Ijersa, Sama Ijersa1, Tikur Wuha, Awasa Wabe Wabeshebele No1 and Fish Market.

4.13. Lake Chitu

This is a very small crater lake with a total area of 0.8km and a maximum depth of 21meters which is part of Abijata-Shalla Lakes National Park. The altitude of the lake area is 1,604 m. It is found at the geographical co-ordinates of N 07° 24′ 17.8″ E038° 25′ 37.3″. The lake is an important feeding site of lesser flamingoes and so it is an important flamingo lake. 15,000 lesser flamingoes are using the lake regularly. The counting site is a point count of all the flamingoes which are congregated all along the perimeter of the Crater Lake and feeding in the middle water scattered in the lake. As a whole it is very poor lake in species diversity.

4.14. Lake Shalla

Lake shalla is also one of the largest lakes found among the central rift valley lakes of Ethiopia. Its geographical location is N07° 25′ 26.7″ E038° 25′ 41.6″. The attitude in the area is 1557m asl. It has an area of 329 square kilometers a maximum depth of 266 meters and a mean depth of 87 meters. The lake has become a site of big concentration of water birds including Lesser Flamingo, Greater Flamingo, and Avocets, ducks, grebes and cormorants. The southern portion of the lake is a very important part of the water bird concentration at a locality called Shalla Gike and there is apermanently established counting site in this part of the lake. The total established transect length for the regular count along the lake shore is 1.8km with a start of transect length co-ordinate of N **072526.7 E038 2541.6** and end of transect length co-ordinate reading **N07 2512.7 E03824 44.0**. This part of the lake shore is the sole concentration of water birds surrounding the lake. The highest concentration birds is the Pied Avocet with more than 3,000 individuals.

4.15. Boyo Swamp and Lake.

This wetland which has a combination of both lake and swamp habitats has a total area of 80 square kilometers and it is an important lake for Great White Pelicans, Wattled Cranes, Common Cranes, Black-crowned Cranes, storks, different species of Egrets and Herons. It is a highland lake which is found 200 kilometers from Addis Ababa with a shorter distance from Addis Ababa through Werabe to Hosa'na. It is found at the geographical co-ordinates of N07° 28′ 25.5″ E038° 25′ 41.6″ and altitude is 1,897m above sea level. The lake has already an established site of counting water birds and the lake shore along the transect length of 6.21km is the established site for counting water birds on regular basis. The GPS reading of the start of shore length is **N07°30′06.7″ E038°04′12.9″** and the GPS reading for the end of transect is

N07°28′25.5″ E 038°01′56.6″. Other co-ordinates taken in the middle of the census are **0396444/ 0826305, 0396222/ 0826068 and 0395422/0826039.**

4.16. Lake Areket

This lake is found 215 km from Addis Ababa in Gurage zone of Southern Nations, Nationalities and Peoples Regional State and it is also one of the highland lakes and this is also man-made lake. It is found at the geographical co-ordinates of N 07° 56′ 53.7″ E038°04′ 11.7″ and its altitude is 2,382 meters. It is a shallow lake and a critical habitat for the Blue-winged Goose, Yellow-billed Duck, Maccoa Duck and it is also feeding habitat of different species of other ducks, Red-Knobbed Coot and Little Grebe. The whole perimeter of the lake is considered for counting of water birds which has a total length of 4.971km. Regular highest counts are made on the Egyptian Goose, Blue-winged Goose, Little Grebe and Red-knobbed coot with a total number of 510, 196,193 and 286 respectively in this counting season.

4.17. Gilgel Gibe Dam

It is found 280km from Addis Ababa in Sokoru district of Jimma zone situated at the geographical co-ordinates of N 07° 47′ 06.5″ E037° 20′ 08.6″ and has an altitude of 1,670m. The wetland is formed as a result of the dam made to produce electric power from Gibe River. It is an important wetland where different duck species like the Fulvous Whistling Duck, White- Faced Whistling Duck, Northern Pintail and Yellow-billed Duck are found. Water bird count in this wetland is made at a regular basis on a permanently established transect and the transect length is 1.45km. The start coordinate of the shore length is **X= 0316480 Y= 0860907** and the end co-ordinate of shore length is **X=0316417 Y= 0862353.**

4.18. Borkena Swamp

This wetland found in Amhara region 310 km north of Addis Ababa on the high way between Debre Birha and Dessie has an estimated area of 33 square kilometers is 15 kilometers far from Kemise town. It is located in the geographical co-ordinates of N 10° 38′ 03.4″ E 039° 55′ 48.9″ and the altitude of the area is 1,413meters above sea level. It has been an important wetland as feeding site of thousands of ducks such as Northern Pintails, Common Teal and Northern Shovelers. Other birds like Spur-winged Lapwing, Senegal Thick-nee and White-faced Whistling Ducks are frequently counted birds. . At present this wetland is at an alarming state where most of the area has dried up and Borkena River which feeds this wetland is also because of an increasing water pumping activities by the local people in the area which is encouraged by the government as a strategy for food security without initial study of the impact of the irrigation activities on the river. Borkena swamp is found 350kms from Addis Ababa in Amhara regional State at a close distance from Kemise town.

4.19. Lake Logo

Lake Logo is one of the highland lakes in the country found 432km from Addis Ababa very close to a small town called Haik. It is located in the geographical co-ordinates of N11°19′ 02.6″ E 039° 42′ 40.2″ and it is found at an altitude of 1910meters. . It has an area of 23 square kilometers according to the latest information of the lake and its depth is 56m which was 88meters in the past. It is one of the lakes encompassed with a lot of threats that makes the lake at the worst position. The lake which was once a productive lake with a lot of fish resource is now depleted of its fish. The surrounding wetland which was one rich with a lot of water birds is now empty and the entire reed habitat has gone. A lot of small farms are roaming the surrounding lake and they are becoming a big threat for the lake so that siltation and habitat destruction are prominent features of the lake. As a result water bird diversity and abundance is rapidly decreasing from year to year. The shore length co-ordinates established for water bird census along Logo Lake is the co-ordinate for the start of the shore length is **37P 0577495 UTM 1250986** and the co-ordinate for the end of the shore length is **37P0575708 UTM 1253502.**

4.20. Lake Ardibu

Lake Ardibu is also one of the highland lakes in the country found 477km from Addis Ababa close to the same town Haik where Logo Lake is found. It is found 17km from Haik town in the geographical co-ordinates of N 11° 15′ 28.8″ E 039° 46 ′24.3″ and an altitude of 2,132km. It has an area of 20 square kilometers and the whole perimeter of the lake is 18.113km and it has been a relatively rich lake in the abundance and diversity of water birds and in its fish resources. However, recent human threats are imposing great problem on the resource status of the lake. The whole lake perimeter is surrounded by irrigation activities from local people where a lot of water pumping generators are pumping water from the lake without due consideration of its capacity and there is no any regulatory mechanism from government to make things on the right direction and the whole lake perimeter is considered during count of water birds and the co-ordinates of the whole lake perimeter are listed in the following table. Permanent counting sites have been established to count water birds in the wetland on regular basis and these sites are named Chireti and Debeso, Borkena Bridge, Messena and Korcha and the co-ordinates and altitudes of the sites at which the counts are done are tabulated below.

4.21. Lake Ashenge

This lake is found 630km from Addis Ababa in Tigray region only 9 km far from the district town called Korem. It is also one of the highland lakes in the country situated in the geographical co-ordinates of N12° 35′ 43.3″ E 039°31′03″. The altitude of the area

where the lake found is 2,445 meters above sea level and the area of the lake is 15 square kilometers. The whole perimeter of the lake is considered in counting the water birds on regular basis and the perimeter of the lake is 13.88km. Currently the lake is suffering from the impacts of human activities as a result siltation and lake eutrification are major causes of spoilage of the lake quality and the fish resource of the lake has been highly depleted and water bird abundance and diversity has been gradually decreasing. However the lake is still an important habitat for some unique ducks like Common Pochard and White –eyed Duck which are not seen in many of the wetlands in the country. Eleven GPS co-ordinates have been taken all along the whole perimeter of the lake in counting water birds on regular basis and they are tabulated below.

4.22. Shesher –Walala Flood Plain

This wetland is formed as a result of the over flood of Rib river which is a tributary to Lake Tana. As its name indicates this wetland is named by combining two separate but adjacent wetlands which are found very close to each other. It is found 621kilometer from Addis Ababa close to a large town called Wereta and from Wereta one drives 17 kilometers to reach the wetland. Geographically it is situated in the co-ordinates of N11° 57′ 42.6″ E 037° 37′ 49.7″ for Shesher and N 11° 59′ 26.7″ E 037° 36′ 48.2″. This flood plain is very rich in migrant birds where one can count thousands of Northern Pintails, Northern Shovelers, and Common Cranes, Ruffs and Little Stints on regular basis. The wetland is facing a heavy threat because local people are draining the wetland for cultivation every year and at the end of January most of the land will be dry. There are established transects for counting water birds in this wetland on regular basis and for Shesher the transect length is 2.17km with the start transect co-ordinate of N 11° 57′ 42.6″ E037°37′49.7″and the end transect coordinate of N11°56′ 37.6″ E37° 37′39.1″ where as for Walala the transect length is 2.561km and the start co-ordinate of shore length is **N 11° 59′ 26.7″ E 037° 36′ 48.2″** and end co-ordinate of shore length is **N 11° 58′ 51.1″ E037° 36′ 45.6″.**

4.23. Lake Tana

It is the largest highland lake in the country with a total area of 3,600 Sq.km. It is found very close to one of the largest cities in the country, Bahir Dar. It is situated at geographical co-ordinates of N 11° 36' 54.7" E 037° 22' 01.6". Basically the entire lake

surface area does not have any potential of waterbirds. The most important wetlands are those encircling the vast lake area and regular counts are conducted on these wetlands. These wetland sites encircling Lake Tana are Yiganda and Daga Marshes, Fure Mariam and Sesela Bata Swamps. Currently the wetlands encircling the lake are deteriorating both in quality and quantity. There is high degradation from unchecked human activities and a vast area of the wetlands encircling the lake are engulfed by Water Hyacinth which is the most outstanding threat imposing great harm on the biodiversity of the lake.

Table2: Regular Waterbird Census Sites on Wetlands encircling Lake Tana

Ser.no.	Site Name	Co-ordinates
1.	Daga Marsh	N 12° 00' 01.8" E 037° 35' 033"
2.	Yiganda Marsh	N 11° 41'56.9" E 037° 18 '45.8"
3.	Fure Mariam Swamp	N 11° 40' 41" E 037 18 45.8
4.	Sesela Bata Swamp	N 11° 36' 54.7" E 037°' 22 01.6"

4.24. Atal-Keme'a Flood Plain

This wetland is also found a few kilometers far from Shesher-Walala flood plain and close to the same town as it is to Shesher-Walala. The wetland is formed by joining two flood plains which are found adjacent to each other. These are the Atal Flood Plain which is situated at the geographical co-ordinates of N11°55′ 02.1″ E037°35′11.5″ and Keme'a Flood Plain which is situated at geographical co-ordinates of N11°54′18.4″ E037°35′06.4.″ The altitude of the area where the wetland found is 1,789m above sea level. The distance from Wereta town to Atal-Keme'a Flood Plain is 19km-driving 9 km south of the town on the asphalt road and then driving for 10km due west on dry weather road. It is an important feeding and roosting site for many migrant ducks, the Common Pratincole and Common Cranes. The wetland is, however facing the same threat as Shesher-walala in that every year the farmers are draining the wetland for cultivation and there is high competition on land in the area. Because of this draining practice most of the wetland has been drained and covered with different crop types when we reached the area and the water birds counted were very small compared to the previous years. The highest count was made on the Ruff, Egyptian Goose and Eurasian Teal with a total number of 4,651,622 and 310 respectively

4.25. Tikurit Marsh

Tikurit Marsh is found 571km from Addis Ababa and 8km from one of the largest city in the country called Bahir Dar and is situated in the geographical co-ordinates of N11°

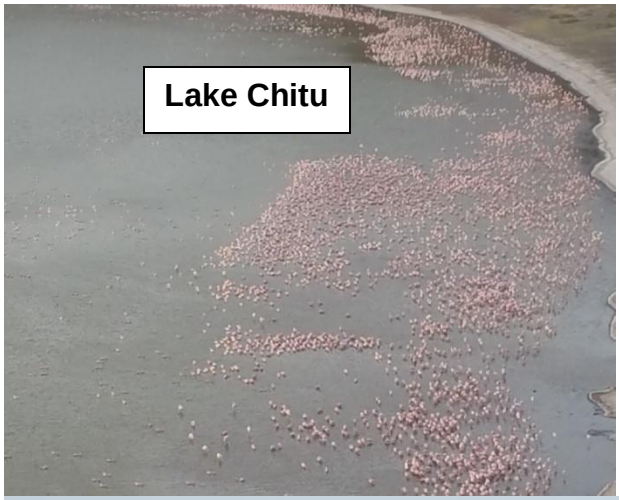
31′ 05.8″ E 037° 24′ 35.1″ and altitude is 1,778m. It was an important feeding site of different migrant and resident water birds. The water birds are counted on permanently established shore length on regular basis the length of the transect being 1.5km and the start coordinate of the shore length is N 11° 31′ 09.4″ E037° 23′ 47″ and the end co-ordinate of the shore length is N11° 31′ 05.8″ E037° 24′ 35.1″. At present it is the most ever degraded wetland which is an irreversible loss because of the recent new town established surrounding the wetland. The situation is also more aggravated with a new prison and referral hospital with Medical College facility very close to the wetland which is the root cause of other development schemes in the area. No significant bird population was counted and everything is on the verge of disappearing.

4.26. Gudo Bahir ponds

These ponds are found close to Bahir Dar city only 2 km from the city. They are situated in the geographical co-ordinates of N11°35′07.1″ E037°21′28.4'and the altitude is 1,812m. They are separate but adjacent three small ponds. The ponds are good habitats for some duck species and birds are counted on these ponds at regular basis. The ponds are poor in terms of species diversity. The entire pond areas are considered for water bird counting on regular basis. This year the highest bird count was made on the White-faced duck with total population of 760 birds.

4.27. Chimba Wetland

This wetland found 34km west of Bahir Dar town is situated in the geographical co-ordinates of N11° 40′ 50.3″ E037° 09′ 33.9″. The wetland is currently in a good condition with low human disturbance and it is feeding site for many migrant ducks and also an important breeding habitat of Black-crowned Cranes and also an important site for Wattled Cranes and other many resident water birds. A transect has already been established at Chimba wetland /Amba Giorgis/ Marsh to count water birds on regular basis and the transect length is 2.118km and the coordinates of the start of the shore length is **N11° 40′ 47.3″ E037°09′ 17.1″** and the co-ordinates of the end of the shore length is **N11° 41′ 35.3″ E037° 09′37.7″.**



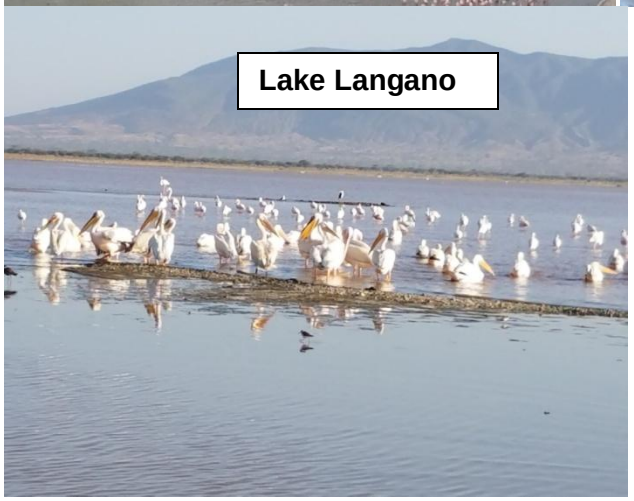


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Table1: Analysis of Wetland bird Species Composition in the Wetlands of Ethiopia from1978-2019

Name of Wetland	YEARS OF WATERBIRD COUNTS AND NUMBER OF BIRD SPECIES RECORDED IN EACH YEAR												
	1970	1971	1994	2004	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gefersa Reservoir	-	-	-	-	-	20	28	29	21	23	18	24	29
Berga Marsh	-	-	-	-	14	24	28	28	24		25	34	32
Chelekleka Floodplain	-	-	-	-	36	52	49	47	42	42	40	43	50
Chefa Floodplain	-	-	-	-	26	28	19	35	0	33	38	38	26
Green Lake	-	-	-	-	21	21	21	21	23	22	17	20	21
Cuba Dam	-	-	-	-		21	35	42	39	32	27	38	40
Lake Kilole	-	-	-	-	13	34	29	35	31	33	31	24	31
Koka Dam	-	-	-	-	49	51	53			39	45	48	51
Lake Zeway	-	-	60	-	64	62	57		58	42	56	58	56
Lake Abijata	81	73	47	-	28	30	22	22	31	14	22	10	19
Lake Langano	-	-	-	-	48	46	51		45	39	30	37	34
Lake Awassa	-	-	-	-	75	68	67			50	61	53	58
Lake Chitu	-	-	-	-	14	4	1		4	3	3	1	3
Lake Shalla	-	-	-	-	25	30	27		26	23	24	21	20
Boyo Swamp	-	-	-	-	38	36	42		-	29	25	14	15
Lake Areket	-	-	-	-	38	35	32		-	34	34	33	26
Gilgel Gibe Dam	-	-	-	-	29	38	33		-	33	-	29	32
Gambella Swamp	-	-	-	-	36	38	37		-	-	-	-	-
Borkena Wetland	-	-	-	-	28	49	8	26	-	-	-	-	34
Lake Logo	-	-	-	-	25	35	32	21	-	-	20	-	18
Lake Ardibu	-	-	-	-	46	52	48	46	-	-	37	-	24
Lake Ashenge	-	-	45	-	44	35	34	30	-	-	22	-	22
Tekeze River	-	-	-	-		14	20	17	-	-	-	-	-
Shesher Walala Flood Plain	-	-	-	52	40	52	45		-		-	-	40
Lake Tana	-	-	-	43	58	65	65		-	-	44	-	40
Atal-Keme'a Flood Plain	-	-	-	52	38	43	32	38	-	-	-	-	38
Gudo Bahir ponds	-	-	-	-	13	18	15	19	-	-	31	-	20
Chimba Wetland/Amba Giorgis/	-	-	-	-	34	34	49	50	-	-	-		40

Table2: Summarized Results of the January 2019 Water bird Counts in Ethiopia

Site	Date	No. of Birds	No. Species
The Central Highlands of Ethiopia			
Gefersa Reservoir	15 Dec.2018	880	29
Berga Marsh	16 Dec.2018	1440	32
Green Lake	17 Dec. 2018	2,373	21
Chefa Flood Plain	17 Dec.2018	2,472	26
Chelekleka Flood Plain	18 Dec.2018	10,158	50
Cuba /Belbela/Dam	18 Dec.2018	760	40
Lake Kilole	19 Dec. 2018	1,183	31
Ethiopian Rift Valley Lakes			
Koka Dam	20 Dec. 2018	3,744	51
Lake Zeway	21 Dec.2018	6,756	56
Lake Abijata	22 Dec.2018	11,668	19
Lake Langano	23 Dec.2018	1,282	34
Lake Awassa	05 Jan. 2019	3,753	58
Lake Shalla	04 Jan.2019	5,746	20
Lake Chitu	04 Jan.2019	35,102	3

North and North Western Highland Lakes and Swamps of Ethiopia			
Borkena Swamp	26 Dec. 2018	2,110	34
Lake Logo	26 Dec.2018	933	18
Lake Ardibu/Hardibu/	27 Dec. 2018	2,143	24
Lake Ashenge/Hashenge/	29 Dec. 2018	1,953	22
Shesher-Walala Floodplain	29 Dec.2018	8,578	40
Lake Tana	29 Dec.2018	8,771	40
Atal-Keme'a Flood Plain	30 Dec 2018	6,351	38
Tikurit Marsh	31 Dec.2018	106	15
Gudo Bahir ponds	30 Dec.2018	915	20
Chimba wetland/Amba Giorgis/	31 Dec.2018	3,741	40
Wetlands in South West Ethiopia			
Boyo Swamp	04 Jan.2019	965	15
Lake Areket	04 Jan. 2019	1,724	26
Gilgel Gibe Dam	03 Jan.2019	766	32

Table3: Water bird numbers of the Central Highland Lake sites of Ethiopia counted for the 2019 Census

Name of Water bird Species	Gefersa Reservoir	Berga Marsh	Chelekleka Floodplain	Chefa Floodplain	Green Lake	Cuba Dam	Lake Kilole	Total
Little Grebe	10	3	48	5	370	3	20	460
Great Crested Grebe	-	-	3	-		1	22	26
Great Cormorant	3	-	-	-	-	16	2	21
African Long-tailed Cormorant	2	-	1	-	-	1	-	4
African Darter	1		-	-	-	2	-	3
Great White pelican	1	-	-	-	-	6	-	7
Pink-backed Pelican	-	1	1	-	-	-	-	2
Squacco Heron	-	-	7	-	-	1	-	8
Cattle Egret	-	255	3,145	27	-	125	58	3,610
Little Egret	-	-	-	-	-	2	1	3
Great White Egret	-	1	10	18	-	1	-	30
Purple Heron	-	1	-	-	-	-	-	1
Grey Heron	1	1	1	7	-	2		12
Black-headed Heron	-	1	-	-	-	-	-	1
Hammerkop	-	3	1	1	-	-	-	5
Yellow-billed Stork	-	-	1	-	-	2	7	10

Abdim's Stork	-	-	1	-	6	-	-	7
White Stork	-	-	10	-	-	-	-	10
Marabou Stork	2	-	765	-	-	-	-	767
Glossy Ibis	-	76	13	-	-	-	-	89
Hadada Ibis	-	6	3	-	-	-	-	9
Wattled Ibis	1	673	2	-	-	3	3	682
Sacred Ibis	68	34	752	11	-	-	4	869
African Spoonbill	2	-	1	7	-	1	-	11
Greater Flamingo	-	-	155	15	80	-	-	250
Fulvous Whistling Duck	-	-	-	8	-	-	-	8
White-faced whistling Duck	-	-	56	18	-	-	-	74
Blue-winged Goose	1	133	-	-	-	-	-	134
Egyptian Goose	658	26	784	10	87	419	685	2,669
Spur-winged Goose	-	-	22	9	-	-	-	31
Knob-billed Duck	-	-	1	16	-	1	-	18
Eurasian Teal	13	6	-	-	-	-	-	19
Cape Teal	-	-	-	-	107	-	-	107
Yellow-billed Duck	30	78	15	20		19	24	186
African Black Duck	6	-	-	-	-	-	-	6
Northern Pintail	10	-	26	4	34	13	16	103
Red-billed Teal	-	-	-	7	30	5	-	42
Hottentot Teal	-	-	2	-	-	-	-	2

Garganey	-	4	-	8	-	6	-	18
Northern Shoveler	12	15	-	37	1,500	2	3	1,569
Southern Pochard	-	-	-	1	30	23	-	54
Tufted Duck	-	-	-	-	-	10	36	46
Maccoa Duck	-	-	-	-	21	-	1	22
African Fish Eagle	-	-	-	1	-	1	2	4
Pallid Harrier	-	-	-	1	-	-	-	1
Western Marsh Harrier	-	-	-	9	-	2	-	11
Rouget's Rail	-	7	-	-	-	-	-	7
Red-knobbed Coot	-	22	-	99	38	13	204	376
Common Crane	-	-	-	2,168	-	37	1	2,206
Black crowned Crane	-	6	-	2	-	-	-	8
African Jacana	-	-	7	-	-	-	-	7
Black-winged Stilt	6	1	-	-	4	1	5	17
Pied Avocet	1	2	-	-	12	1	2	18
Common Ringed Plover	-	-	-	-	-	-	1	1
Kittlitz's plover	-	-	-	-	-	-	6	6
Three-banded Plover	-	2	-	-	-	-	2	4
Spur-winged Lapwing	7	24	-	-	4	6	26	67
Black-winged Lapwing	-	7	-	-	-	-	-	7
Little Stint	1	-	-	-	5	4	7	17
Temminck's Stint	-	-	2	-	-	-	-	2

Ruff	1	4	-	-	10	11	2	28
Common Snipe	12	-	-	-	-	-	1	13
African Snipe	-	1	-	-	-	-	-	1
Black-tailed Godwit	-	-	-	-	-	3	5	8
Spotted Redshank	6	-	-	-	-	-	-	6
Marsh Sandpiper	-	-	-	-	14	1	14	29
Common Green shank	1	-	-	-	2	1	3	7
Green Sandpiper	2	-	-	-	5	1		8
Wood Sandpiper	3	-	-	-	6	8	11	28
Common Sandpiper	20	-	-	-	7	2	9	38
Grey-headed Gull	-	-	-	-	-	1	-	1
Black- headed Gull	-	-	-	-	-	3	-	3
Total Birds	**880**	**1,393**	**5,835**	**2,509**	**2,372**	**760**	**1,183**	**14,932**
Total Species	**29**	**32**	**50**	**26**	**21**	**40**	**31**	**229**

Table4: Water bird numbers of the Rift Valley Lakes of Ethiopia counted for the 2019 Census

Name of Water bird Species	Koka Dam	Lake Zeway	Lake Abijata	Lake Langano	Lake Awassa	Lake Shalla	Lake Chitu	Total
Little Grebe	5	6	-	15	16	-	-	42
Great Cormorant	14	10	-	5	331	11	-	371
African Long-tailed Cormorant	1	29	-		87	-	-	117
African Darter	4	8	-	-	1	-	-	13
Great White pelican	49	414	-	271	20	50	-	804
Pink-backed Pelican	12	-	-	-	-	-	-	12
Squacco Heron	2	13	-	-	118	-	-	133
Cattle Egret	9	139	5	2	280	-	-	435
Black Egret	-	-	-	-	2	-	-	2
Little Egret	4	9	-	8	25	-	-	46
Great White Egret	5	12	1	-	30	-	-	48
Purple Heron	-	1	-	-	10		-	11
Grey Heron	13	16	-	-	2	13	-	44
Goliath Heron	2	3	-	-	1	-	-	6
Hammerkop	33	72	-	7	28	-	-	140
Yellow-billed Stork	2	12	-	2	-	-	-	16

Saddle-billed Stork	2	4	-	-	-	-	-	6
Marabou Stork	2	182	-	145	78	-	-	407
Glossy Ibis	6	22	-	2	4	-	-	34
Hadada Ibis	-	-	-	-	8	-	-	8
Wattled Ibis	-	-	-	1	1	-	-	2
Sacred Ibis	28	238	41	12	159	6	-	584
African Spoonbill	6	16	-	-	-	1	-	23
Greater Flamingo	-	-	1	105	-	161	-	261
Lesser Flamingo	-	-	9,201	14		860	35,000	45,075
Fulvous Whistling Duck	174	155	-	-	116	-	-	445
White-faced whistling Duck	115	895	-	-	458	-	-	1,468
Egyptian Goose	116	334	52	-	222	42	2	768
Spur-winged Goose	49	49	-	-	42	-	-	140
Knob-billed Duck	1	12	-	-	4	-	-	17
African Pygmy Goose	-	4	-	-	69	-	-	73
Cape Teal	-	-	-	-	-	5	-	5
Yellow-billed Duck	-	-	-	-	4	-	-	4
Northern Pintail	-	3	-	-	2	-	-	5
Hottentot Teal	40	22	-	-	58	-	-	120
Garganey	13	106	-	-	46	-	-	165
Northern Shoveler	13	-	-	-	1	-	-	14
Southern Pochard	-	1	-	-	2	-	-	3

Maccoa Duck	-	-	-	-	3	-	-	3
African Fish Eagle	21	31	1	2	19	-	-	74
Western Marsh Harrier	1	5	2	-	5	-	-	13
Red-knobbed Coot	145	51	-	2	858	-	-	1,056
Black Crake	-	-	-	-	8	-	-	8
Purple Swamphen	-	-	-	-	5	-	-	5
Common Moorhen	-	5	-	-	35	-	-	40
Common Crane	-	-	27	-	-	-	-	27
Black crowned Crane	2	1	2	-	6	-	-	11
African Jacana	6	172	-	-	88	-	-	266
Black-winged Stilt	21	30	-	15	14	32	-	112
Pied Avocet	128		8	3	-	3,068	-	3,207
Collared Pratincole	-	134	2	-	-	-	-	136
Little Ringed Plover	-	-	-	-	4	-	-	4
Common Ringed Plover	23	13	1	19	4	5	-	65
Kittlitz's plover	33	34		95	2		-	164
Three-banded Plover	-	-	-	-	2	-	-	2
Spur-winged Lapwing	54	128	4	60	33	6	-	285
Crowned Lapwing	-	-	9	-	-	-	-	9
Little Stint	233	82	4	-	28	42	-	389
Curlew Sandpiper	-	-	-	-	-	4	-	4
Ruff	1,068	3190	2,250	-	38	351	100	6,997

Common Snipe	2	3	-	-	4	-	-	9
Black-tailed Godwit	125	43	-	-	14	-	-	183
Marsh Sandpiper	14	21	-	-	4	7	-	46
Common Green shank	3	3	-	-	5	-	-	11
Green Sandpiper	1		-	-	-	-	-	1
Wood Sandpiper	11	45	-	-	17	-	-	73
Common Sandpiper	9	2	-	-	7	-	-	18
Grey-headed Gull	50	2	45	-	71	69	-	237
Black- headed Gull	-	2	-	-	4	-	-	6
Lesser Black-backed Gull	1	25	-	8	-	-	-	34
Gull-billed Tern	505	1	13	6	2	13	-	540
Whiskered Tern	1	1	-	-	-	-	-	2
White-winged Tern	567	15	-	16	250	1,000	-	1,848
Woodland Kingfisher	-	3	-	-	-	-	-	3
Malachite Kingfisher	-	-	-	-	6	-	-	6
Pied Kingfisher	-	-	-	-	10	-	-	10
Total Birds	**3,744**	**6,829**	**11,669**	**815**	**3,771**	**5,746**	**35,102**	**67,676**
Total Species	**51**	**56**	**19**	**34**	**58**	**20**	**3**	**241**

Table5: Water bird numbers of the North western lakes and swamps of Ethiopia counted for the 2019 Census

Name of Water bird Species	Borkena Swamp	Lake Logo	Lake Ardibu	Lake Ashenge	Sheshere Walala	Lake Tana	Atal Keme'a Flood Plain	Tikurit Marsh	Gudo Bahir ponds	Chimba Wetland	Total
Little Grebe	-	50	29	65	117	-	1	1	-	1	264
Great Crested Grebe	-	-	-	73	-	-	-	-	-	-	73
Great Cormorant	-	11	22	18	5	-	-	-	-	-	56
African Long-tailed Cormorant			25				2	6		1	34
Great White pelican	45	-	19	50	150	31	20	-	-	-	315
Pink-backed Pelican	-	-	-	-	4	-	-	-	-	-	4
Squacco Heron	24	-	2	-	10	36	3	5	-	25	105
Cattle Egret	178	7	55	1	57	54	23	22	7	121	525
Little Egret	1	2	-	1	-	2	10	-	-	4	20
Intermediate Egret	2	-	-	-	-	4	5	2	-	4	17
Great White Egret	8	1	-	-	-	2	85	-	-	75	170
Purple Heron	-	-	2	-	-	-	4	-	-	-	6
Grey Heron	17	5	6	5	1	6	5	1	3	-	49
Black-headed Heron	-	-	-	-	-	1	-	-	-	1	2
Goliath Heron	-	-	-	-	1	1	1	-	-	-	3
Hammerkop	1	16	7	-	-	-	-	-	-	-	24

Yellow-billed Stork	19	3	-	-	2	-	11	-	1	-	36
African Open-bill	-	-	-	-	-	-	-	-	-	112	112
Saddle-billed Stork	1	-	-	-	-	-	1	-	-	3	5
Marabou Stork	67	3	23	-	-	7	-	20	-	-	120
Glossy Ibis	15	-	7	-	6	-	-	-	-	5	33
Hadada Ibis	-	-	-	-	3	2	2	-	-	39	46
Wattled Ibis	-	-	2	20	-	2	-	-	-	7	31
Sacred Ibis	47	17	4	2	4	30	23	9	1	53	190
African Spoonbill	14	-	-	-	2	6	7	-	1	-	30
Fulvous Whistling Duck	-	-	-	-	-	-	10	-	-	1	11
White-faced whistling Duck	-	-	-	-	12	-	-	-	760	-	772
Egyptian Goose	10	5	23	1,000	681	1,008	622	8	37	110	3,504
Spur-winged Goose	8	-	-	-	8	59	107	2	31	153	360
Knob-billed Duck	-	-	-	-	-	-	3	5	3	204	215
Eurasian Wigeon	-	-	-	-	1	28	-	-	-	-	29
Eurasian Teal	-	-	-	4	1	-	310	-	-	102	417
Northern Pintail	1,050	-	-	11	1,660	1,500	-	-	15	-	4,236
Hottentot Teal	2	-	-	-	-	-	-	-	-	-	2
Garganey	275	-	-	-	4	-	62	-	-	676	1,027
Northern Shoveler	100	-	-	141	40	100	50	-	-	110	540
African Fish Eagle	2	3	1	-	1	6	4	-	1	9	27
Western Marsh Harrier	3	1	1	1	1	2	3	-	-	3	15

Rouget's Rail	-	-	2	-	-	-	-	-	-	-	2
Red-knobbed Coot	-	781	181	500	-	-	20	-	1	-	1,483
Common Moorhen	-	-	2	-	-	-	-	-	-	-	2
Wattled Crane	-	-	-	-	-	-	-	-	-	3	3
Common Crane	-	-	-	-	5,000	3	195	-	-	-	5,198
Black crowned Crane	-	-	-	-	4	24	22	2	-	246	298
African Jacana	12	-	1		1	25	1	19	-	-	59
Black-winged Stilt	25	-		7	56	2	1	-	1	26	118
Pied Avocet	-	-	-	-	95	-	-	-	-	-	95
Senegal Thicknee	109	-	-	-	-	-	-	-	-	-	109
Collared Pratincole	-	-	-	-	-	100	2	-	-	-	102
Little Ringed Plover	-	-	-	-	2	-	-	-	-	-	2
Common Ringed Plover	1	-	-	25	-	6	-	-	3	-	35
Kittlitz's plover	-	-	-	-	4	-	-	-	-	-	4
Three-banded Plover	-	1	1	-	-	1	-	-	-	-	3
African Wattled Lapwing	-	-	-	-	-	-	-	-	-	1	1
Spur-winged Lapwing	40	4	2	2	2	7	22	1	2	4	84
Little Stint	1			1	25	100	2		10	16	145
Temminck's Stint	-	-	-	1							1
Ruff	14		-		326	5,340	4,651		1	1,570	11,902
Common Snipe	3	-	-		1		4			14	22
Black-tailed Godwit	3	-	-		180	250	51			1	485

Spotted Redshank	4	-	-	-	-	-	-	-	-	-	4
Marsh Sandpiper	3	-	-		5	2	1		5	18	34
Common Green shank	-	-	-	-	1	1	-	-	-	-	2
Green Sandpiper	-	-	-	-	-	4	-	-	1	1	6
Wood Sandpiper	6		1	1	-	7	5	3	1	1	25
Black-headed Gull	-	-	12	25	-	-	-	-	-	-	37
Lesser Black-backed Gull	-	-	-	-	-	10	-	-	-	-	10
Gull-billed Tern	-	-	-	-	7	1	-	-	-	-	8
White Winged Tern	-	-	-	-	9	-	-	-	-	-	9
Total Birds	**2,110**	**910**	**430**	**1,954**	**8,489**	**8,770**	**6,351**	**106**	**885**	**3,720**	**33,725**
Total Species	**34**	**18**	**24**	**22**	**40**	**40**	**38**	**15**	**20**	**40**	**291**

Table6: Water bird numbers of the SW lakes and swamps of Ethiopia counted for the 20119 Census

Name of Water bird Species	Boyo Swamp	Lake Areket	Gilgel Gibe Dam	Total
Little Grebe	-	193	-	193
Great Cormorant	-	-	7	7
African Long-tailed Cormorant	-	1	16	17
Great White pelican	255	-	7	262
Squacco Heron	-	1	-	1
Cattle Egret	40	9	42	91
Little Egret	-	3	8	11
Great White Egret	1	2	5	8
Grey Heron	-	-	7	7
Black-headed Heron	-	-	1	1
Hammerkop	1	-	1	2
Marabou Stork	-	-	1	1
Glossy Ibis	-	-	2	2
Hadada Ibis	-	1	-	1
Wattled Ibis	-	3	-	3
Sacred Ibis	28	-	6	34

African Spoonbill	12	2	2	16
White-faced whistling Duck	-	-	118	118
Blue-winged Goose	-	196	-	196
Egyptian Goose	45	510	221	771
Spur-winged Goose	6	-	-	6
Knob-billed Duck	-	-	43	43
Eurasian Teal	-	2	-	2
Yellow-billed Duck		80	169	249
Northern Pintail	-	96	29	125
Hottentot Teal	-	2	-	2
Garganey	-	-	6	6
Northern Shoveler		239	2	241
Tufted Duck	-	10	-	10
Maccoa Duck		49		49
African Fish Eagle	-	-	2	2
Western Marsh Harrier	-	1	-	1
Red-knobbed Coot		286		286
Common Crane	530	-	-	530
Black-winged Stilt	-	6	1	7
Kittlitz's plover	14	-	-	14
African Wattled Lapwing	-	-	4	4
Spur-winged Lapwing	4	13	8	25

Little Stint	5	-	-	5
Ruff	10	-	7	17
Black-tailed Godwit	-	10	26	36
Marsh Sandpiper	-	-	2	2
Common Green shank	-	-	2	2
Wood Sandpiper	-	5	-	5
Common Sandpiper	-	2	2	4
Grey-headed Gull	-	-	2	2
Lesser Black-backed Gull	-	-	2	2
Gull-billed Tern	4		16	20
White-winged Tern	10	2	-	12
Total Birds	**965**	**1,724**	**767**	**3,434**
Total Species	**15**	**26**	**32**	**73**

Table7: Count Results of water birds by groups in the different regions of Ethiopia in January 2019.

Waterbird Groups	Central Highlands	Rift Valley	North Western	South Western	Total
Grebes	486	42	337	193	1,058
Cormorants and Darters	28	816	90	24	958
Pelicans	9	816	319	262	1,406
Egrets and Herons	3665	725	897	119	5,406
Hammerkop	5	140	24	12	181
Storks	794	429	273	1	1,497
Ibises and Spoonbills	1,659	651	332	36	2,678
Flamingoes	250	45,316	-	-	45,566
Ducks	2,274	2,224	7,349	845	12,692
Geese	2,834	908	3,864	967	8,573
Fish Eagles and Harriers	16	87	42	3	148
Rails and Crakes	7	8	2	-	17
Gallinules and Moorhens	-	45	2	-	47
Coots	376	1,056	1,483	286	3,201
Cranes	2,214	38	5,499	530	8,281
Jacanas	7	266	59	-	332
Stilts and Avocets	35	3,319	213	7	3,574
Thicknees	-	-	109	-	109
Pratincoles	-	136	102	-	238
Plovers	11	235	44	14	304
Lapwings	74	294	85	29	482
Stints and Ruffs	47	7390	12,048	22	19,507
Snipes	14	9	22	-	45
Godwits and Redshanks	14	183	489	-	686
Sandpipers	110	149	67	13	339
Gulls	4	277	47	4	332
Terns	-	2,390	17	32	2,439
Kingfishers	3	16	5	-	24

5. CURRENT CONDTION OF THE WETLANDS IN THE COUNTRY

The wetlands in the country are deteriorating from year to year due to the unregulated human activities ranging from the traditional use of the habitats for grazing to direct abstraction of the water for irrigation. Pollution of the wetland habitats arising from excessive use of fertilizers and pesticides by the boosting flower industry and blooming irrigated agriculture in many rift valley lakes is another serious threat that has greatly affecting the future of the biological and physical environment of the lakes. Waste disposal system in towns is so rudimentary that people are aggravating the pollution of wetlands by throwing plastic bags and bottles into the wetland habitats. Lakes Zeway and Awassa are most affected by this practice. The invasive species of *Eichhornia crassipes* (Water Hyacinth) is another overriding problem which has severely affecting the wetland habitat of Koka Lake. Degradation of upper catchments has had serious consequences in the downstream wetlands and almost all lake ecosystems are affected due to this problem resulting in siltation and habitat succession which is not suitable for water birds Below are the list of the wetlands visited in the 2018 annual water bird census program and problems identified which should be addressed urgently to ensure the healthy ecological interaction in these wetland ecosystems.

Ser.no	Name of wetland	Major Threats Identified
1.	Gefersa Reservoir	Siltation, grazing
2.	Berga Marsh	Over grazing, siltation, upstream habitat degradation
3.	Chelekleka Flood Plain	Water abstraction, waste disposal pollution, cultivation of the surrounding habitat, siltation, habitat destruction
4.	Chefa Flood Plain	Siltation, cultivation of the surrounding wetland, wetland cultivation by draining the wetland.
5.	Green Lake	Pollution from methane gas of cow dung and local use for washing clothes by detergents
6.	Cuba Dam	Siltation, surrounding cultivation, unregulated water abstraction for irrigation, over fishing irrigation, habitat destruction, habitat change where the wetland habitat invaded by unwanted plants.

7.	Lake Kilole	Unregulated Water abstraction for irrigation, pollution from methane of cow dung and detergent use by local people for washing closes, habitat destruction.
8.	Koka Dam	Invaded by the Invasive plant species Water Hyacinth, pollution from pesticide use and fertilizer, water abstraction for irrigation by local farmers, flower industry and large scale irrigation scheme, siltation, habitat destruction
9.	Lake Zeway	Upstream habitat degradation, siltation, pollution from pesticides, fertilizer and waste disposed of by people, municipality sewerage, water abstraction for the flower industry and irrigation farms, the looming threat from Water Hyacinth, plastic pollution
10.	Lake Abijata	Water abstraction for Soda Ash production, siltation, water inflow into the lake has ceased and the fate of the lake to nearing on the verge of drying. Only 40 sq.km water remaining from what has been 80 sq. km. in 2010, habitat destruction
11.	Lake Langano	Upstream water diversion and habitat degradation, siltation
12.	Lake Awassa	Pollution from municipality sewerage and rudimentary waste disposal by the local people, the whole surrounding lake area engulfed by agriculture, siltation, water abstraction for irrigation and domestic use by the city administration
13.	Lake Shalla	Upstream water diversion and habitat degradation, siltation
14.	Lake Chitu	Pollution from cow dung methane and detergent used for washing clothes by local people
15.	Boyo Swamp	Siltation, upstream habitat degradation, habitat destruction
16.	Lake Areket	Over grazing, Siltation, upstream habitat degradation, lake surrounding cultivation
17.	Gilgel Gibe Dam	Upstream habitat degradation, siltation, overgrazing, habitat devastation of the wetland
18.	Borkena Swamp	Overstocking of live stock, farming, expansion of settlement, eucalyptus plantation.

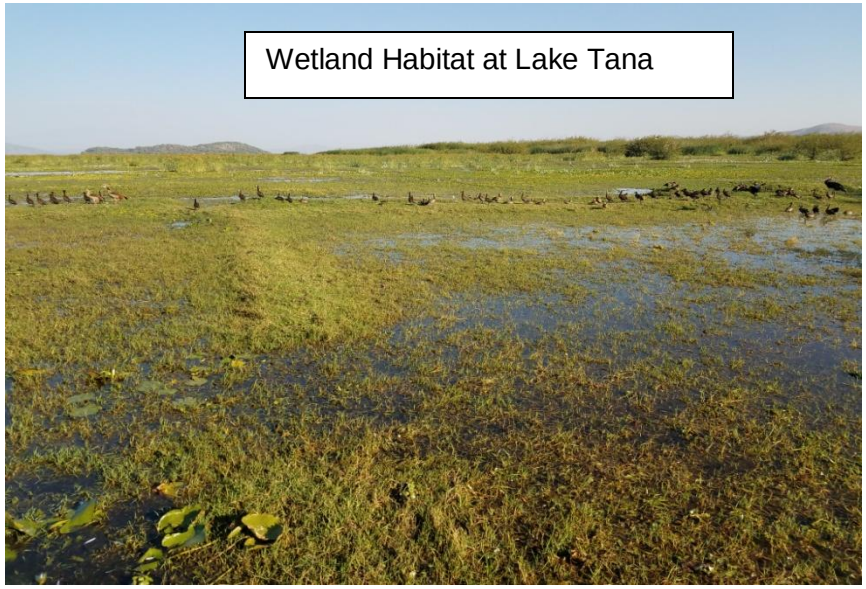
19.	Lake Logo	Overfishing, lake surrounding agriculture, siltation, pollution from chemical fertilizers, pesticides and plastic pollution, unregulated water abstraction by using water pumps.
20.	Lake Ardibu	Overfishing, lake shore reclamation for agriculture, siltation, pollutants from chemical fertilizers and pesticides, unregulated water abstraction by using water pumps
21.	Lake Ashenge	Overfishing, pollution from chemical fertilizers and pesticides, overgrazing, siltation and surrounding lake farming
22.	Shesher-Walala Flood Plain	Over grazing, settlement, emerging threat of Water Hyacinth, water draining for agriculture.
23.	Lake Tana	Overfishing, invasion of Water Hyacinth with a total area of 5,500ha,
24.	Atal-Keme'a Flood Plain	Wetland cultivation by water drainage,
25.	Tikurit Marsh	Newly established village, Surrounding lake farming, siltation, unregulated water abstraction, land reclamation for development.
26.	Godo Bahir ponds	Overgrazing, settlement, emerging threat of Eater hyacinth, water drainage for agriculture
27.	Chimba Wetland	Overgrazing, agricultural expansion, wetland cultivation, hanbitat fragmentation.

6. CONCLUSION

The current devastating conditions of the wetlands in the country are so alarming that the situation should be reversed in order to get the best out of the functions of wetlands in the ecosystem. The only solution for this problem is to develop more sustainable approaches to land and water-use that respect the needs of both people and biodiversity and limit further claims on land and water. This can be achieved by identifying sites and habitats occurring in the country that support water birds and encourage the protection, management, rehabilitation and restoration of these sites.

The overall water bird count results in 2019 are very disappointing in many of the wetlands that most wetlands have showed a decreasing status in species composition and population size. This negative result was much pronounced in the wetlands where we had a good number of water bird species in the previous years. Especially Lake Koka , Lake

Abijata,ake Ashenge, Lake Tana, Tikurit marsh and Boyo swamp are highly affected in the overall results. In most cases however the duck population has declined very much since 2016 in most of the wetlands in the country.



Wetland Habitat at Lake Tana

Wetland habitat at Lake Zeway