NIGERIAN CONSERVATION FOUNDATION

COUNTRY REPORT

INTERNATIONAL WATERBIRDS CENSUS (IWC)
SAMPLE COUNT JANUARY 2024

NIGERIA

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1. Introduction

Nigeria has a landmass of about 923770 sq.km and lies between the latitude 4° 10' to 60° 20' N and longitude 20° 45' to 80° 35' E. In the north, it shares a boundary with Niger Republic, the Republic of Chad and the Republic of Benin. In the south, the boundary is extended to the Republic of Benin, while the Cameroon Republic bounds the country in on the southeastern axis.

From the Sudan-Sahelian savannah in the northern region to the moist and humid forest and coast in the south, there are varying habitat types that support different biodiversity. The vegetation from the Sudan savannah features extensive grassland and sparse trees. This changes towards the south as the trees increase forming moist lowland rainforest, swamp forest, mangroves and the coastline bounding the Atlantic Ocean.

This matrix of varying ecological habitats supports different kinds of biodiversity and provides ecosystem services to sustain the lives and livelihoods of the people. The annual waterbird counts thus provide the opportunity to understand the response of the species to biotic and abiotic pressures. The information is useful to the management of these sites for the waterbirds, other species and humans. The exercise provides relevant information on the threats to the resident and migratory species, sites or the impacts of global climate change (Maclean et al. 2007).

The 2024 exercise is set to meet the following objectives: (i) To monitor the population and threats facing the birds and their habitats. (ii) To determine the population trend of the birds in selected sites over the years. (iii) To continue to raise awareness and educate the people on species and habitat protection across these sites. (iv) To build and improve the capacities of local stakeholders in species and habitat monitoring.

Overview of the country and the covered zones/sites

The sites sampled during the 2024 waterbird count are in two major ecological zones, namely, the Sudan Savannah in the north and the coastal wetlands in the south. In the northernmost part of the countries, the rainfall and river regimes determine the availability of water in the wetlands. These wetlands are seasonally flooded, sustained by short periods of rainfall, typically less than four months annually, creating an ecological system that sustains different levels of activities throughout the year. These inland wetlands are part of the largest wetland complexes in the savannah region and some of them are globally recognised as a RAMSAR site (BirdLife International, 2011).

In the south, wetlands are moist all year round as the rainfall is almost all year round, typically between seven to ten months. This provides ecological habitats that are typically stable all year round. The habitats here range from moist lowland rainforest, montane forest, swamp forest, mangroves, brackish waters and different kinds of coastal beaches.

The ecological structure of the northern savannah is mainly grassland with sparse trees. This changes progressively southwards as tree density increases and grasses become sparse. Towards the coast, rainfall increases, typically falling all year round (11 – 12 months). The vegetation here is typically swamp forest, mangroves and coastal beaches.

These habitats also sustain the livelihoods of the people as the communities around these areas often depend on fishing and agriculture as their source of livelihood. Land and use changes from developmental activities also alter the integrity of these habitats. The sites covered are highlighted in Figure 1.

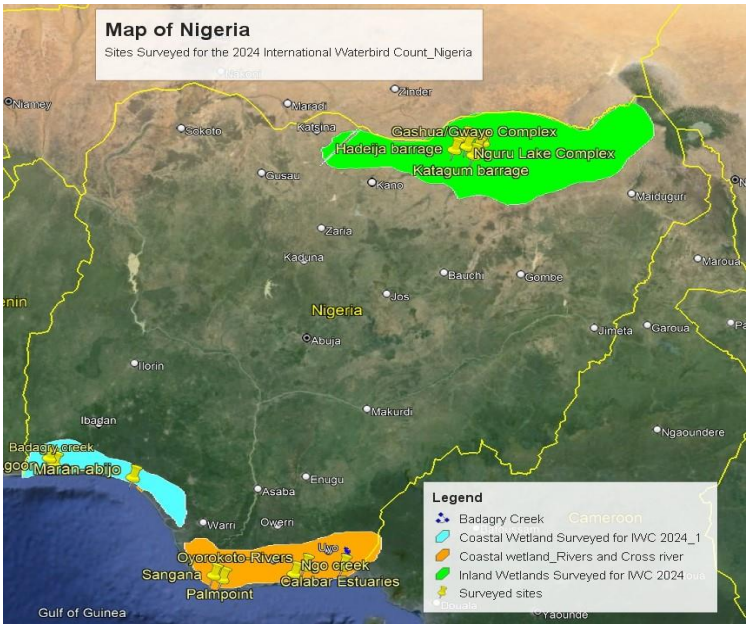

Figure 1: Map of Nigeria showing the Survey areas.

Table 1: List of Sites Surveyed During the 2024 Winter Counts

Zone / Region / Department	Main site	Sites name	Geographical coordinates
North West/ Inland wetland	Hadeija Nguru Wetland Complex	Baturia	N12.5839 E10.5379
North East/ Inland wetland	Hadeija Nguru Wetland Complex	Dagona waterfowl sanctuary	N12.4859 E10.4440
North East/ Inland wetland	Hadeija Nguru Wetland Complex	Gashaua/Gwayo	N12.4630 E10.4238
North East/ Inland wetland	Hadeija Nguru Wetland Complex	Katagum barrage	N12.3327 E10.3647
North West/ Inland wetland	Hadeija Nguru Wetland Complex	Marma channel	N12.6465 E10.2277
North East/ Inland wetland	Hadeija Nguru Wetland Complex	Nguru Lake Complex	N12.5015 E10.2518
North West/ Inland wetland	Hadeija Nguru Wetland Complex	Hadeija barrage	N12.4364 E10.0333
North West/ Inland wetland	Hadeija Nguru Wetland Complex	Barrack	
South West/coastal wetland	Badagry	Badagry creek	N6.2719 E3.1235
South East/coastal wetland	Calabar	Calabar estuaries	N4.5208 E8.1626
South West/coastal wetland	Badagry	Ologe lagoon	N6.2804 E3.0553
South West/coastal wetland	Illaje	Manran abijo	N6.1157 E4.4095
South South/coastal wetland	Andoni	Ngo-creek Rivers	N4.3059 E7.2766
South South/coastal wetland	Andoni	Oyorokoto Rivers	N4.2795 E7.3166
South West/coastal wetland	Illaje	Illaje - bijimi	N6.0391 E4.4942
South South/coastal wetland	Akassa	Palmpoint	N4.1646 E6.0504
South South/coastal wetland	Akassa	Sangana	N4.1942 E5.5979
South West/coastal wetland	Illaje	Mahin canal	N6.1149 E4.4896

2. Methodology & Equipment

Twenty-three sites were surveyed in different parts of the country from the 17th – 31st of January 2024. The surveys were carried out using a combination of different mediums including foot, motorbikes, cars and boats. The survey method chosen is largely dependent on the nature of the habitat and the ease of accessibility. Binoculars, telescopes, cameras, field guides, field notes and mobile phones with biodiversity-recording applications were used to identify and record birds. All birds sighted in flight, perched and heard were recorded and, in some cases, where birds are hidden within the vegetation, attempts were made to flush them to maximise counting chances.

3. Results and discussion

A- Results

Two hundred and eighty-nine thousand, six hundred and thirty-one birds were recorded during the 2024 waterbird count. Three thousand, seven hundred and forty-two of these were recorded in the coastal wetlands while two hundred and ninety-four thousand, eight hundred and eighty-nine birds were recorded in the inland wetland. Species diversity recorded was 85, 61 species were recorded in the inland wetlands and 48 species in the coastal wetlands.

A.1 Species and numbers counted

The most abundant species include White-faced whistling duck (*Dendrocygna viduata*) with **108,199** individuals; Ruff (*Calidris pugnax*) **85,187**; Garganey (*Spatula querquedula*) **39,471**; Fulvous duck (*Dendrocygna bicolor*) **24,168**. In the coastal wetlands, the Long-tailed cormorant was the most abundant with **623** individuals; White-faced whistling duck, **479,** Common sandpiper (*Actitis hypoleucos*) **347** and Western cattle egret (*Bubulcus ibis*) **137** individuals. In the inland wetlands, bird species abundance was highest in Baturia (**127,715**), Dagona (**79, 505**) and Gwayo (**35,645**) while Marma channel (**37**), Baturia (**35**), Dagona (**31**) and Gwayo (**30**) had the highest species richness. This detail is summarised in Figure 3. In the coastal wetlands, species richness was highest around Andoni Islands with Oyorokoto having the highest species abundance with **731** individuals, Palmpoint, Badagry and Ologe had **645**, **632** and **340** individuals. Species diversity was highest in Badagry with **21** species, Palmpoint, Ilaje-bijimi and Ologe have **20**, **19** and **18** species respectively. This is summarised in Figure 2a & 2b.

Species abundance was analysed for some of the inland wetland sites from 2022 to 2024 and the trends across the sites differ. In Dagona and Gashua/Gwayo complexes, species abundance has declined since 2021 while the trend is reversed in Baturia with 2024 having the highest species abundance in the last three years. The was a decline in species abundance in Nguru lake in 2023 compared to 2022, however, this improved in 2024. Species abundance was similar across years in the other sites, this detail is summarised in Figure 3.

The trend in species abundance was also compared for the coastal sites from 2022 to 2024. Of the eight sites surveyed, species abundance was highest in 2024 in six of them, namely, Badagry, Ilaje-Bijimi, Ngo creek, Oyorokoto, Palmpoint and Sangana. Ologe lagoon had the highest species abundance in 2023 while Calabar estuaries had the lowest count in the same year. This is summarised in Figure 4.

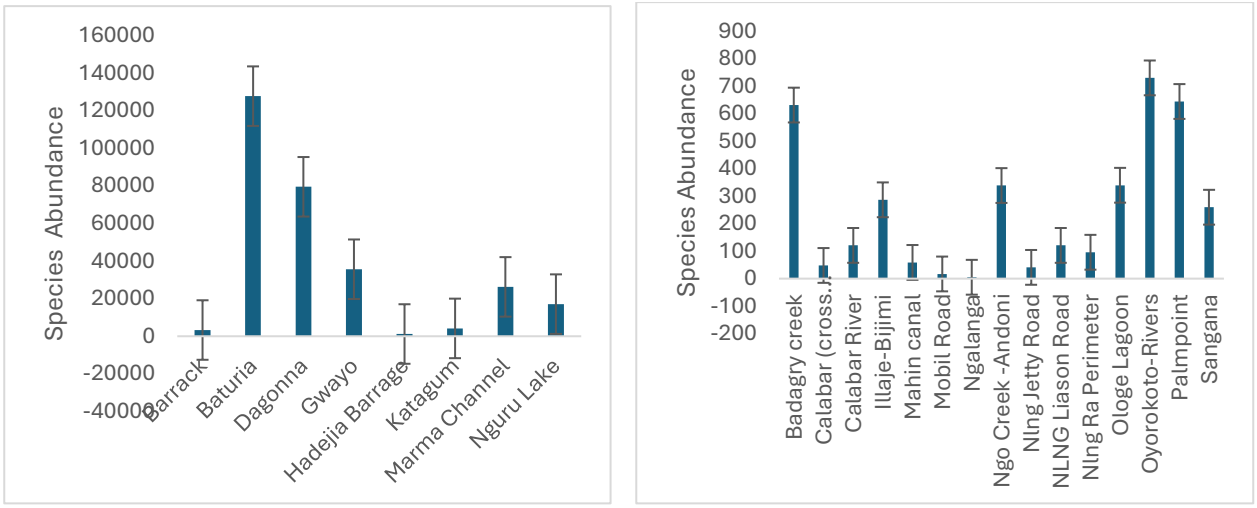

Figure 2a & 2b: Species Abundance in the inland (left) and coastal (right) wetland sites

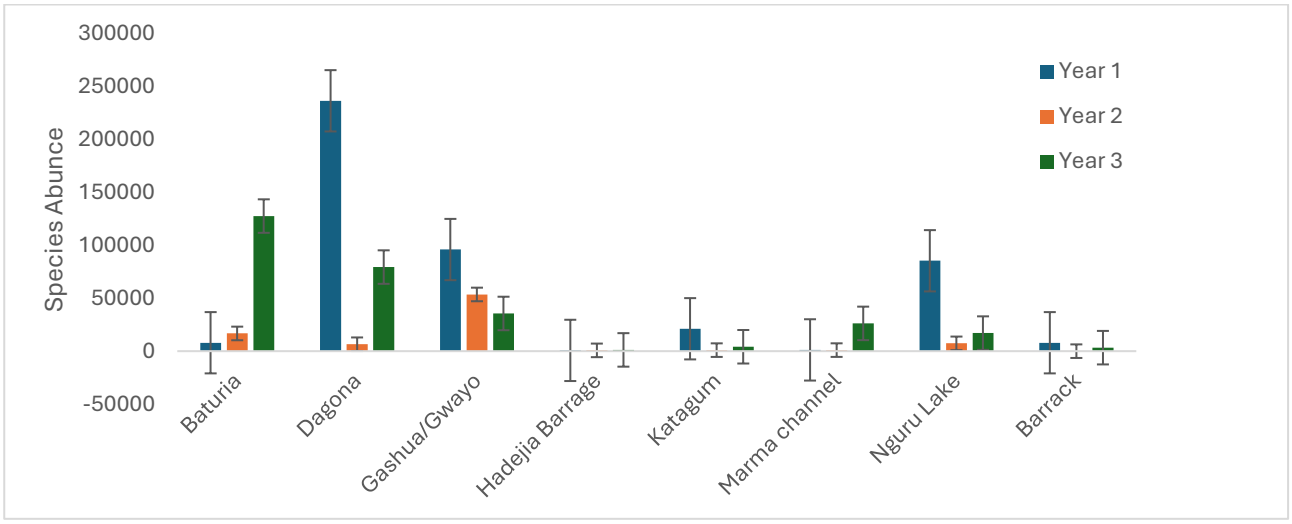

Figure 3: Species abundance in the inland wetlands from 2022 to 2024

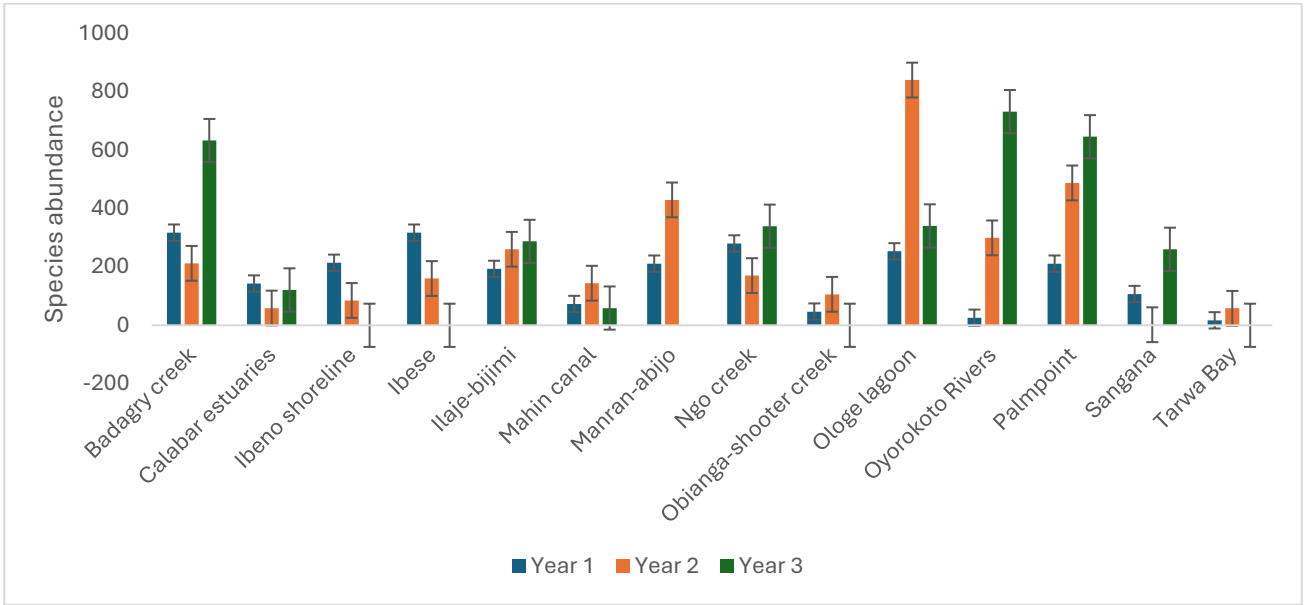

Figure 4: Species abundance in the coastal wetlands from 2022 to 2024

A.2 Specific threats to the sites

Table with most important pressures/threats to wetlands per site

Site	Main threats to species and site
Hadeija barrage	Invasive Typha spp displacing natural wetland vegetation and overfishing
Katagum	Drought, logging and agricultural expansion
Baturia	Logging, poaching and overfishing
Marma	Logging
Dagona	Agricultural expansion and logging
Gwayo	Agricultural expansion
Nguru Lake	Invasive Typha spp displacing natural wetland vegetation
Gashua	Agricultural expansion and logging
Badagry	Sand dredging
Ologe	Overfishing
Illaje-bijimi	Coastal encroachment with rising sea levels displacing communities and natural habitat
Mahin	Overfishing
Manran	Overfishing
Palmpoint	Overfishing
Sangana	Transportation on the beach
Ngo creek	Invasive *Nypa fruticans* displacing mangrove ecosystem
Oyorokoto	Overfishing
Calabar estuaries	Overfishing and water transportation
Calabar river	Overfishing and water transportation

Discussion

Baturiya, Dagona sanctuary and Gashua-Gwayo are three sites that form part of the Hadija-Nguru complex, the habitat is a matrix of Sudano-Sahel savannah, seasonally flooded plains and the Guinean forest habitats surrounded by human-dominated landscapes. They form part of the extensive Hadejia-Nguru Wetlands, Baturia is a RAMSAR site protected by the state government as a Game reserve and in 2021 was declared a National Park. Dagona has always been recognised as a biodiversity hotspot, bird sanctuary and has also been recently designated as part of the Nguru-Hadejia-Bade Biosphere Reserve by UNESCO. Gashua/Gwayo Gwayo complex also retains similar features and part of it is under the protection of Chad Basin National Park.

Climate change and anthropogenic land use is increasingly impacting the habitats leading to land use change, extreme flooding and drought, the presence of some management and Site Support Groups mitigates these pressures. The habitat still retains the quality that makes it suitable for congregants of resident and migratory birds.

Katagum, Marma and Nguru lake though are most impacted by the anthropogenic and abiotic factors of climate change, they still retain features that make them attract a good number of waterbirds. There is a need to work with the local communities to mitigate the impacts of agricultural intensification around this site.

For the coastal wetlands, they are mostly community sites without current management plans. Overfishing, logging, indiscriminate waste, sand dredging and global climate change continue to

impact the quality of these habitats and their ability to retain larger waterbird populations. For example, there has been a marked decline in the population of African jacana in Ologe, during the 2022 count, 73 individuals were observed, in 2023, 242 individuals were recorded, only 17 individuals were recorded in the 2024 counts. In 2022, Terns were common in both Mahin and Ilaje-bijimi with over one hundred individuals recorded in 2022. This declined remarkedly in 2023 with records of less than ten, this improved slightly in 2024 with about 70 individuals recorded.

The jacanas are resident, and declines may be ascribed to the impact of abiotic pressures in the site, the terms include migrant species and the pressure that impacts its population is not necessarily at the site. Continuous monitoring of the species and the site is necessary to understand the interventions needed in both cases.

B.1 Difficulties encountered, quality and coverage of the count

Flooding in certain sites in HNW complex continues to make some sites increasingly difficult to access and assess. Another challenge is the different skill levels of monitors as more volunteers are recruited to increase the number of sites surveyed. This also provides the additional challenge of inadequate monitoring equipment. Similarly, the invasive *Typha australis* is also posing a very big threat to the survival of wetlands and the ability to access them.

B.2 Results analysis **(comparisons with results from former years)**

The trend in species abundance and richness was also compared for 2022 to 2024, of the eight sites surveyed, species abundance was highest in 2024 in six of them, namely, Badagry, Ilaje-Bijimi, Ngo creek, Oyorokoto, Palmpoint and Sangana. Ologe lagoon had the highest species abundance in 2023 while Calabar estuaries had the lowest count in the same year.

Species richness was also compared across the sites in the last three years, Badagry had the highest records in 2023 even though species abundance was highest in 2024. This trend was also similar in Calabar Estuary. Species richness was also highest in Ilaje-bijimi and Sangana in 2024.

In the inland wetlands, Typha spp, agricultural intensification and climate change continue to persist. In the coastal wetlands, logging of mangroves, overfishing and invasive Nypa species continue to persist and threaten waterbird populations and the site quality. Site-based management is recommended for the conservation of these sites to protect them for the waterbirds while preserving the ecosystem services that they provide for the support zone communities.

B.3 Improvements and learning points for the future

- Increase in the number of sites surveyed including new sites in the coastal wetlands in Bonny Islands.
- There is a need to develop the capacities of site support groups to increase monitoring efforts at different sites, this will increase the quality of the data of migratory species, especially in understanding the areas they use as stopovers or destinations during their migration. Such information is necessary in explaining the obvious absence of some species like terns from sites where they have been previously recorded.

- There is a need to implement activities that improve habitat quality at key sites, especially interventions that promote sustainable habitat use by people in local communities.

4. Acknowledgements

The Nigerian Conservation Foundation is grateful for the financial support from Wetland International for support for the 2024 waterbird count. The Nigerian Conservation Foundation also acknowledge all the volunteers and local communities that took part in the exercise and supported the teams in different communities. Also worthy of note is the support from different institutions including Ayetoro Youth Forum, Save-I Conservation Organization , Federal University Dutse, Jigawa State Ministry of Environment, Yobe State Ministry of Environment, and Chad Basin National Park. Finally, appreciation goes to the Site Support Groups (SSGs)/resource users in all communities within and around the surveyed sites for their cooperation and support during the 2024 water bird census.

5. Appendix

List the observers involved and their organisations

Name & Surname	**Organisations / Institutions**
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Shittu Usman	Nigerian Conservation Foundation
Raynus Henry	Akassa
Godwin Imbolo	Akasa
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Hassan Hassan	Jigawa State Ministry of Environment
John James	Federal University, Gashua Yobe State
Mohammed Bala	NCF/HNWCP
Shehu Mohammed	Chad Basin National Park