



Simultaneous January 2020 waterbird and wetland census
along the East Atlantic Flyway: National Reports



© Wadden Sea Flyway Initiative, Wetlands International, BirdLife International

This census, part of a monitoring programme, was organized by the Wadden Sea Flyway Initiative, Wetlands International and BirdLife International in cooperation with the national authorities, organisations and institutions responsible for waterbird and wetland monitoring in their country.

Besides the organisations funding these national monitoring partners, the organisation and carrying out of the survey of January 2020 was supported by the Dutch Ministry of Agriculture, Nature and Food Quality through Programme Towards a Rich Wadden Sea and the Swiss foundation MAVA. Additional funding was received from the German Federal Ministry of Environment, Nature Conservation and Nuclear Safety, Government and National Park Wadden Sea from Niedersachsen, Government and National Park Wadden Sea from Schleswig-Holstein, Ministry of Environment and Food Denmark, Vogelbescherming Nederland, the Wetland Bird Survey through the British Trust for Ornithology, Wildfowl and Wetlands Trust and Tour du Valat.



Organisation and editing: Marc van Roomen^{1,2}, Gabin Agblonon³, Tom Langendoen³, Geoffroy Citegetse⁴, Aissatou Yvette Diallo¹, Khady Gueye³, Erik van Winden^{1,2} & Gerold Lürßen^{1,5}

- ¹ Wadden Sea Flyway Initiative
- ² Sovon, Dutch Centre for Field Ornithology
- ³ Wetlands International
- ⁴ BirdLife International
- ⁵ Common Wadden Sea Secretariat



Layout: Gerold Lürßen, Common Wadden Sea Secretariat

Title picture: Google Earth, US Dept of State Geographer, Image Landsat / Copernicus, © Google 2018, Data SIO, NOAA, U.S.Navy, NGA, GEBCO

Recommended citation whole report: van Roomen M., Agblonon G., Langendoen T., Citegetse G., Diallo A. Y., Gueye K., van Winden E. & Luerssen G. (eds.) 2020. Simultaneous January 2020 waterbird census along the East Atlantic Flyway: National Reports. Wadden Sea Flyway Initiative p/a Common Wadden Sea Secretariat, Wilhelmshaven, Germany, Wetlands International, Wageningen, The Netherlands, BirdLife International, Cambridge, United Kingdom.

Recommended citation separate chapters (example): Conde M. B. M. 2020. Rapport du dénombrement des oiseaux d'eau, République de Guinée, Du 27 Janvier au 10 Février 2020. In: van Roomen M., Agblonon G., Langendoen T., Citegetse G., Diallo A. Y., Gueye K., van Winden E. & Luerssen G. (eds.) 2020. Simultaneous January 2020 waterbird census along the East Atlantic Flyway: National Reports. Wadden Sea Flyway Initiative p/a Common Wadden Sea Secretariat, Wilhelmshaven, Germany, Wetlands International, Wageningen, The Netherlands, BirdLife International, Cambridge, United Kingdom.

Simultaneous January 2020 waterbird and wetland census along the East Atlantic Flyway: National Reports

Wadden Sea Flyway Initiative
Wetlands International
BirdLife International

**This report is dedicated to the memory of
Mohamed Balla Moussa Conde (Guinee),
Kenneth Gbengba (Sierra Leone) and
Maria Eugenia (Angola)**

Summary / Résumé

Summary

Countries from Iceland to Estonia and from Norway to South Africa, all along the East Atlantic Flyway, participated in the 2020 East Atlantic Flyway waterbird survey. In many countries in East Atlantic Africa financial support and extra counters were organized to contribute to this survey. Countries have been requested to contribute a small national overview to give a first impression of the results collected. 32 countries are presenting their results in this report. A further 5 have collected count data which can be used in future analyses. A total of more than 12,000 observers have collected this data, often in their free time but also large contributions of government institutions, national park and nature reserves officers, NGO's and research organisations are involved. 250 waterbird species have been recorded in total. Of the 95 East Atlantic Flyway focal species, more than 14 million birds have been counted. At 110 important sites information about environmental circumstances, human use and pressures have been collected. A comprehensive analyses of the population status of the species using this flyway and the state of the wetlands they use will be published at the end of 2021.

This work is part of a cooperation between the Wadden Sea Flyway Initiative (WSFI), Wetlands International (WI) and BirdLife International (BLI) to improve the monitoring of waterbirds and wetlands along the East Atlantic Flyway. This cooperation was initiated after the inscription of the Wadden Sea (shared by Denmark, Germany and The Netherlands) as a World Heritage site in 2009.

Résumé

Les pays de l'Islande à l'Estonie et de la Norvège à l'Afrique du Sud, tout au long de la voie de migration de l'Atlantique Est, ont été invités à participer spécifiquement au dénombrement de 2020 sur les oiseaux d'eau de la voie de migration de l'Atlantique Est. Dans de nombreux pays d'Afrique de l'Est Atlantique, un soutien financier et des compteurs supplémentaires ont été organisés pour contribuer à ce recensement. Il a été demandé aux pays de fournir un petit aperçu national pour donner une première impression des résultats recueillis. 32 pays présentent leurs résultats dans ce rapport. Cinq autres pays ont collecté des données de comptage qui pourront être utilisées dans de futures analyses. Au total, plus de 12 000 observateurs ont collecté les données, souvent pendant leur temps libre, mais d'importantes contributions d'institutions gouver-

nementales, de responsables de parcs nationaux et de réserves naturelles, d'ONG et d'organismes de recherche ont également été apportées. Au total, 250 espèces d'oiseaux d'eau ont été enregistrées. Sur les 95 espèces prioritaires de la voie de migration de l'Atlantique Est, plus de 14 millions d'oiseaux ont été recensés. Ce matériel sera utilisé pour calculer la taille des populations sur la voie de migration (il a fallu corriger les comptages incomplets et utiliser l'extrapolation). Sur 110 sites importants, des informations sur les circonstances environnementales, l'utilisation humaine et les pressions ont été recueillies. Une analyse complète de l'état de la population des espèces utilisant cet voie de migration et de l'état des zones humides qu'elles utilisent sera publiée à la fin de 2021.

Ce travail s'inscrit dans le cadre d'une coopération entre l'Initiative de la voie de migration de la mer des Wadden (WSFI), Wetlands International (WI) et BirdLife International (BLI) visant à améliorer le suivi des oiseaux d'eau et des zones humides le long de la voie de migration de l'Atlantique Est. Cette coopération a été initiée après l'inscription de la mer des Wadden (partagée par le Danemark, l'Allemagne et les Pays-Bas) au patrimoine mondial en 2009.

Content

Summary / Résumé	5
Content	6
1. Introduction	7
2. Methods	9
3. Norway	12
4. Sweden	14
5. Finland	17
6. Estonia	20
7. Latvia	23
8. Lithuania	26
9. United Kingdom	28
10. Denmark	31
11. Germany	34
12. Netherlands	38
13. Belgium	41
14. France	44
15. Portugal	47
16. Morroco	49
17. Mauritania	53
18. Senegal	61
19. The Gambia	66
20. Guinee-Bissau	69
21. Guinee	73
22. Sierra Leone	76
23. Liberia	80
24. Cote d'Ivoire	83
25. Ghana	87
26. Benin	90
27. Nigeria	93
28. Cameroun	96
29. São Tomé and Príncipe	100
30. Gabom	103
31. Congo Brazzaville	106
32. Republique Democratique du Congo (RDC)	109
33. Angola	112
34. Namibia	116
35. Discussion	119

1. Introduction

For conservation and management of waterbirds, knowledge about their status is needed: how many are there, where do they occur and where are changes happening? Besides the status at individual sites or countries, it is equally important, especially for migratory birds, to have this knowledge on the level of the flyway: how is the 'total' population doing? With that kind of knowledge questions can be answered like: how important is my site or country relative to the size of the entire population or are changes at my site or country similar or different from the fate of the total population? These analysis allows the assessment of local or national responsibility for the conservation status of a species and its habitat, it gives indications if local or global drivers are causing population change. Most migratory waterbirds breed and winter large distances apart with stop-over sites in between. The combination of breeding sites, stopover sites and wintering sites and the area between them, used by the same individual birds is called a flyway. The combination of birds of the same species or subspecies using these sites is called a flyway population.

This report presents results of work on 'coastal' waterbird populations of the East Atlantic Flyway. The East Atlantic Flyway combines areas from arctic Northeast Canada to East Siberia, boreal and temperate Europe and Russia and continues along the East Atlantic seashore from Norway to South Africa. At this flyway many Palearctic and African waterbird populations occur, long and more short distance migrants, and also resident populations. Monitoring flyway populations requires a moment during the year cycle that active migration is at its minimum and numbers can relatively easily be assessed at the whole range where the population occurs. This is mostly done during the breeding season or wintering period depending on the species. This report concentrates on data collected during the winter period through 'coastal' wetland counts in January (and February) 2020 along the whole East Atlantic coast of Europe and Africa (see figure 1). Besides the assessment of waterbird numbers present also environmental circumstances, pressures and conservation measures at the sites visited were collected to allow future analyses of likely drivers for changes in population status.

This work is part of a cooperation between the Wadden Sea Flyway Initiative (WSFI), Wetlands International (WI), BirdLife International (BLI), local organisations and government institutions of countries along the Flyway. The aim of the monitoring is to improve the knowledge base for the conservation, management of waterbirds and

their sites using the East Atlantic Flyway as well as policy and advocacy at national and international level. This cooperation started after the inscription of the Wadden Sea (shared by Denmark, Germany and The Netherlands) as a World Heritage site in 2009. Waterbird populations using the Wadden Sea, both during breeding and migration, depend on the (coastal) sites along the East Atlantic Flyway during periods of the year that they are not within the Wadden Sea itself. This perspective for cooperation is the same for other countries as their breeding, migrant or wintering populations also use other sites along the flyway. By cooperating in the flyway context, we ultimately collect information that allow countries to understand the use of the flyway which is beneficial to conservation nationally and locally.

The overall aims of the survey 2020 were:

- Collect simultaneous counts of waterbirds using (coastal) wetlands along the East Atlantic Flyway in January 2020 as a vital contribution to assessments of population size, distribution and trends of flyway populations of waterbird species.
- Collect counts of individual (key) sites along this flyway as a vital contribution to monitoring these sites, especially their importance for waterbirds in the non-breeding period of January.
- To collect data about environmental circumstances, including human use and conservation at the sites counted as vital contributions to assessments of causes for population change.
- To increase capacity for monitoring of waterbird numbers and wetlands assessments as vital part of local, national and flyway conservation and adaptive management.

The current report summarizes the basic results per country and forms a background document for the future analysis. A full assessment of the results will be published in 2021.

January 2020 Waterbird Count! Coordinated along the East Atlantic Flyway

Janvier 2020 Dénombrement des oiseaux d'eau! Coordonné le long de la voie de migration de l'Atlantique Est

Working together to understand the status of migratory waterbirds for better conservation
Travaillons ensemble pour comprendre le statut des oiseaux d'eau migrateurs pour une meilleure Conservation

To all involved in the January 2020 count

The East Atlantic Flyway encompasses a string of key sites from the Arctic to Southern Africa where waterbirds find refuge during breeding, migration and non-breeding. Insights about the total numbers, threats, trends and distribution of the populations using this flyway is a prerequisite for their conservation. To build this knowledge a huge joint effort is needed as the populations concerned are distributed over many countries on long distances.

In a combined effort of national governments, institutions, national NGOs, volunteers and international organisations as many as possible, coastal sites of the East Atlantic Flyway will be covered during the January 2020 census. This major survey is a follow-up of a similar effort in January 2014 and 2017.

We would like to express our sincere thanks to everybody involved in the counts, either in the organization, carrying out the counts or in providing funding at both the national and international level. We are looking forward to the results and to share them with the wider network for use in conservation planning! Happy counting!

Marc van Rossum & Gerald Lierßen
(Wadden Sea Flyway Initiative)
Gabin Agblonon, Tom Langendoen & Szabolcs Nagy
(Wetlands International)
Geoffroy Citagetse
(BirdLife International)

À tous ceux qui participent au recensement de Janvier 2020

La voie de migration de l'Atlantique Est englobe de l'Arctique à l'Afrique australe, une série de sites clés où les oiseaux d'eau trouvent refuge pendant la reproduction, la migration et la période de non-reproduction. La connaissance du nombre total d'oiseaux, des menaces, des tendances et de la distribution des populations qui utilisent cette voie de migration est une condition préalable à leur conservation. Pour développer ces connaissances, un immense effort conjoint est nécessaire car les espèces concernées sont réparties dans de nombreux pays et sur de longues distances.

Dans le cadre d'un effort conjoint des gouvernements, institutions, des ONG nationales, des volontaires et un plus grand nombre d'organisations internationales, les sites côtiers de la voie de migration l'Atlantique Est seront couverts lors du dénombrement de Janvier 2020. Cette enquête majeure fait suite à une initiative similaire menée en Janvier 2014 et 2017.

Nous tenons à exprimer nos sincères remerciements à toutes les personnes impliquées dans les comptages, que ce soit dans l'organisation, dans la réalisation des comptages ou dans le financement, tant au niveau national qu'international. Nous attendons avec impatience les résultats et nous les partagerons d'une manière la plus large possible pour une utilisation dans la planification des actions de conservation! Bon comptage!

Marc van Rossum & Gerald Lierßen
(Wadden Sea Flyway Initiative)
Gabin Agblonon, Tom Langendoen & Szabolcs Nagy
(Wetlands International)
Geoffroy Citagetse
(BirdLife International)

Organizations involved in international coordination and financing

Organizations involved in international coordination and financing

Figure 1 Poster used for the announcement of the Total East Atlantic Flyway survey of January 2020. Also Iceland, Finland, Estonia, Latvia, Lithuania and Poland not visible on the map were part of the study area.

2. Methods

Monitoring strategy and methods

The framework of the monitoring programme consists of abundance monitoring, environmental monitoring and vital rate monitoring (van Roomen, Delany & Schekkerman 2013). This integrated approach assesses the state of the species and contributes to the assessment of site condition (at site level more counts are needed than only in January for state monitoring). It enables warnings where conservation and management actions are needed and it will help with pointing to likely causes and formulating hypotheses for more in depth research. At the same time the programme also enables evaluation of ongoing and new responses in conservation and management collecting data about successes and where improved approaches are needed. Of the three elements of the programme, currently the abundance and environmental monitoring is implemented within the WSFI, WI and BLI cooperation and covered in this report. Vital rate monitoring is also carried out for many species and populations by a large number of organisations and institutes but is mostly not brought together across species on flyway level.

Abundance monitoring

Species and populations

The principles as outlined in the guidelines for waterbird monitoring (Hearn et al. 2018) developed under the African Eurasian Waterbird Agreement (AEWA are followed.). For most waterbird species, the breeding period or the non-breeding period (January) is the best time for monitoring flyway populations across countries. The non-breeding period is optimal for species which breed across large ranges of remote habitats in relatively low densities. In winter they often concentrate on a few sites in high concentrations. The current report focuses mainly on these species and follows the methodology of the International Waterbird Census.

This so called mid-winter or January count is part of a long tradition of waterbird surveys under the umbrella of the world-wide International Waterbird Census (IWC) coordinated by Wetlands International. International manuals for this census are available (Delany 2010, Hearn et al. 2018) and most countries have developed their own manual in local language. An East Atlantic Flyway manual for Africa in English, French and Portuguese is available as well (van Roomen et al.

2014). For the same region also a photographic guide book of waterbirds for the African East Atlantic Flyway is widely distributed to help identification of species (Barlow & Dodman 2015).

Sites

The International Waterbird Census contributes to the assessment of the status of waterbird species and flyway populations (Wetlands International 2017) but can collect valuable data for site monitoring as well. The counts are site based and the January counts contribute to our knowledge of the value of individual sites as well. It is a robust assessment of the importance of sites in the middle of the non-breeding period. The data presented in this report contributes also to that aim. However sites should not only be assessed for their importance in January and proper site monitoring should also include the periods during migration time, moult and breeding when different populations and sometimes much higher numbers are present. This kind of site monitoring is carried out in many individual countries and for site monitoring and complete site assessment that data needs to be used. Summary data of these national site monitoring programmes often contributes to the Important Bird and Biodiversity areas programme of BirdLife International (BirdLife International 2006), see also Wetlands International & BirdLife International (2018). Counting total numbers at sites is often straight-forward in relatively small sites but becomes much more difficult in large complex sites. Many of these large and complex sites are covered in this report. In tidal areas waterbirds are often distributed over large areas of mudflat during low tide but are fortunately gathering during high water at high tide roots. This is the moment to count them and coordinated surveys require many observers at a large number of counting units, sometimes on uninhabited islands, at the right time. A large number of tropical tidal wetlands even provides more difficulties as they are fringed by mangroves making high tide roost counts impossible. At these sites only sample counts of parts of the area are possible and extrapolations are needed to assess total numbers at these sites. These kinds of analyses are not done yet for the surveys reported in this report. Also in other countries and other sites the numbers reported for 2020 are counted numbers only and no corrections for incomplete coverage or different detectability are made yet.

Environmental monitoring

Based on the Important Bird and Biodiversity areas programme to assess state of habitat, pressures and conservation responses at sites (Birdlife International 2006) a questionnaire was developed to collect expert opinions from local observers and site managers. This questionnaire was further fine-tuned and extended during pilot use in 2013 and 2014 and was in full use during the survey in 2017 and largely stayed the same for the survey in 2020 (van Kleunen et al. 2018). By filling in the standard excel form for main sites a unique overview of human use and pressures of wetlands along the East Atlantic Flyway has been collected.

About this report

Countries from Iceland to Estonia and from Norway to South Africa, all along the East Atlantic Flyway, participated to the 2020 East Atlantic Flyway survey as part of their International Waterbird Census. In many countries in East Atlantic Africa also financial support and in some extra countries were organized to contribute to this survey. Countries have been requested to contribute a small national overview to this report to give a first impression of the results collected and put emphasis to the large local and national efforts to this kind of international programmes. Of in principle 40 countries, 32 has done so, giving a large overview of results from all over the flyway both in Africa and Europe. It is as such a follow-up report of the one made after the total survey of 2017, which covered East Atlantic Africa (Agblonon et al. 2017). Countries missing are often contributing to the results which later will be analyses for trends etc. but were not able, for several reasons, to contribute a chapter at this stage. Also results of more inland countries will be used in future analyses as not all species and populations of interest are only occurring in the countries covered. Countries reporting count results have done so for the East Atlantic Flyway 'focal' species as covered in van Roomen et al. 2018 or for the whole group of waterbird species following Ramsar definition of "waterbirds". Only species with less than 50 counted individuals along the whole flyway have been excluded from that countries list. Taxonomy and bird names follow Handbook of the Birds of the World and BirdLife International (2019).

References

- Agblonon G., Nsabagasani C., Langendoen T. & van Roomen M. (eds) 2017. National census reports East Atlantic Africa 2017. Results of waterbird and wetland monitoring in the East Atlantic Flyway. Common Wadden Sea Secretariat, Programme Rich Wadden Sea, Wetlands International & BirdLife International, Wilhelmshaven.
- Barlow C.R. & Dodman T. 2015. African East Atlantic Flyway Guide – Photographic Field Guide to Waterbirds and Seabirds of Africa's Western Coastline. Common Wadden Sea Secretariat, Wilhelmshaven, Germany, BirdLife International, Cambridge, United Kingdom, Programme Rich Wadden Sea, Leeuwarden, The Netherlands.
- BirdLife International. 2006. Monitoring Important Bird Areas: a global framework. Cambridge, UK. BirdLife International. Version 1.2.
- Delany, S. 2010. Guidance on waterbird monitoring methodology: Field Protocol for waterbird counting. Wetlands International. Pp 5–17.
- Handbook of the Birds of the World and BirdLife International (2019). Handbook of the Birds of the World and BirdLife International digital checklist of the birds of the world. Version 4
- Hearn R., Nagy S., van Roomen M., Hall C., Citegese G., Donald P., Hagemeyer W. & Langendoen T. 2018. Guidelines on waterbird monitoring. AEWA Conservation Guidelines No. 9, AEWA Technical Series. Bonn, Germany.
- van Kleunen A., Nsabagasani C., Citegetse G., Dodman T. & van Roomen M. 2018. Status description of environmental conditions at important sites for waterbirds along the East Atlantic flyway in 2017. In: van Roomen M., Nagy S., Citegetse G. & Schekkerman H. 2018 (eds). East Atlantic Flyway Assessment 2017: the status of coastal waterbird populations and their sites. Wadden Sea Flyway Initiative p/a CWSS, Wilhelmshaven, Germany, Wetlands International, Wageningen, The Netherlands, BirdLife International, Cambridge, United Kingdom
- van Roomen M., Delaney S. & Schekkerman H. 2013. Integrated monitoring of coastal waterbird populations along the East Atlantic Flyway: a framework and programme outline for Wadden Sea populations. Common Wadden Sea Secretariat, Wilhelmshaven.
- van Roomen M., Delany S., Dodman T., Fishpool L., Nagy S., Ajagbe A., Citegetse G. & Ndiaye A. 2014. Waterbird and site monitoring along the

Atlantic coast of Africa: strategy and manual (also available in French and Portuguese). BirdLife International, Cambridge, United Kingdom, Wadden Sea Secretariat, Wilhelmshaven, Germany, and Wetlands International, Wageningen, The Netherlands.

van Roomen M., Nagy S., Citegetse G. & Schekerman H. 2018 (eds). East Atlantic Flyway Assessment 2017: the status of coastal waterbird populations and their sites. Wadden Sea Flyway Initiative p/a CWSS, Wilhelmshaven, Germany, Wetlands International, Wageningen, The Netherlands, BirdLife International, Cambridge, United Kingdom.

Wetlands International & BirdLife International 2018. Critical Site Network Tool 2.0. Online database. Wetlands International, Wageningen, The Netherlands. URL: <http://criticalsites.wetlands.org/en>

Wetlands International 2017. Waterbird Population Estimates. <http://wpe.wetlands.org>

3. Norway



© Georg Bangjord

Results of January counts 2020 of waterbirds along the Norwegian coast

Svein-Håkon Lorentsen
Norwegian Institute for Nature
Research, NO-7485 Trondheim, Nor-
way, shl@nina.no



1. INTRODUCTION

Stretching from 64 to 79 °N the Norwegian coast offers a multitude of suitable habitats for wintering waterbirds, from rocky coasts to tidal areas. Monitoring of wintering birds are, however, challenging as the mainland coastline, including fiords and small bays, covers nearly 29,000 km, and nearly 101,000 km when including the shores of all islands outside the coast. Only a fraction of these coastlines are accessible from roads. Furthermore, harsh weather during daytime, and lack of daylight north of the Arctic circle during

the winter months make monitoring of waterbirds even more challenging.

Monitoring of wintering waterbirds in Norway was initiated in some selected stretches of coastline in 1975, and with a national coverage of 9 selected areas since 1980 (figure 1). The monitoring is organised by the Norwegian Institute for Nature Research, NINA, and is conducted by members of the Norwegian Ornithological Society. Annually about 100 members of the Ornithological society participate in the monitoring.

2. METHODS

The 9 selected areas for monitoring are divided into smaller localities/count units, 299 in total, each 1-2 km long (some up to 4-5 km), covering minimum 600 km of coastline (c. 2% of the mainland coastline). Each of these localities are counted from land at fixed vantage points, preferably by the same person each year. The counts are performed during late January to late February in most areas except the two northernmost areas (Troms and Varangerfjorden) where they are performed in early March due to the lack of daylight during winter.

3. RESULTS

The results from 2018 and 2020 are presented in table 1, however, note that they are not directly comparable as we have not received the result



Figure 1. Map showing the 9 areas selected for monitoring of wintering waterbirds along the Norwegian coast. The red dots represent the centre of each of the localities/count units.

from the northernmost area from 2020 yet.

The five most common wintering waterbirds within the 9 selected areas for monitoring in 2018, when all areas were completed, is the Common Eider (*Somateria mollissima*), followed by Mallard

(*Anas platyrhynchos*), Common Guillemot (*Uria aalge*), King Eider (*Somateria spectabilis*) and the Long-tailed Duck (*Clangula hyemalis*) (Table 1).

4. DISCUSSION

Pressures

Shallow wintering areas might be affected by wind turbines which are being planned in some areas. Also conflicts of area use with salmon farms might affect wintering waterbirds. The shipping traffic poses a risk of oil spills which could severely impact diving species like cormorants, ducks, grebes and divers. Bycatch might be a problem at least with local fisheries at certain times of the year.

Acknowledgements

The monitoring programme for wintering waterbirds is financed by the Norwegian Environmental Agency. We are very thankful to all members of the Norwegian Ornithological Society that participate in the counts every winter.

Table 1. Numbers of counted waterbird species in the 9 monitored areas along the Norwegian coast in 2018 and 2020.

Scientific name	English name	2018	2020
<i>Cygnus olor</i>	Mute Swan	97	74
<i>Cygnus cygnus</i>	Whooper Swan	359	283
<i>Branta canadensis</i>	Canada Goose	22	168
<i>Anser anser</i>	Greylag Goose	21	73
<i>Anser brachyrhynchus</i>	Pink-footed Goose	20	7
<i>Anser albifrons</i>	Greater White-fronted Goose	15	6
<i>Clangula hyemalis</i>	Long-tailed Duck	5331	3192
<i>Somateria spectabilis</i>	King Eider	9510	1180
<i>Somateria mollissima</i>	Common Eider	28852	8438
<i>Polysticta stelleri</i>	Steller's Eider	2453	1
<i>Melanitta fusca</i>	Velvet Scoter	2414	2788
<i>Melanitta nigra</i>	Common Scoter	1306	985
<i>Bucephala clangula</i>	Common Goldeneye	980	827
<i>Mergellus albellus</i>	Smew	3	5
<i>Mergus merganser</i>	Goosander	60	12
<i>Mergus serrator</i>	Red-breasted Merganser	1872	2147
<i>Tadorna tadorna</i>	Common Shelduck	2	5
<i>Aythya ferina</i>	Common Pochard	0	2
<i>Aythya fuligula</i>	Tufted Duck	152	112
<i>Aythya marila</i>	Greater Scaup	43	165
<i>Mareca strepera</i>	Gadwall	0	2
<i>Mareca penelope</i>	Eurasian Wigeon	2395	1756
<i>Anas platyrhynchos</i>	Mallard	11627	10780
<i>Anas acuta</i>	Northern Pintail	4	10
<i>Anas crecca</i>	Common Teal	137	91
<i>Tachybaptus ruficollis</i>	Little Grebe	14	28
<i>Podiceps grisegena</i>	Red-necked Grebe	70	60
<i>Podiceps cristatus</i>	Great Crested Grebe	86	83
<i>Podiceps auritus</i>	Horned Grebe	185	181
<i>Rallus aquaticus</i>	Western Water Rail	3	2
<i>Gallinula chloropus</i>	Common Moorhen	1	1

Scientific name	English name	2018	2020
<i>Fulica atra</i>	Common Coot	12	4
<i>Gavia stellata</i>	Red-throated Loon	281	208
<i>Gavia arctica</i>	Arctic Loon	14	34
<i>Gavia immer</i>	Common Loon	113	103
<i>Ardea cinerea</i>	Grey Heron	502	597
<i>Gulosus aristotelis</i>	European Shag	1199	862
<i>Phalacrocorax carbo</i>	Great Cormorant	2567	2604
<i>Haematopus ostralegus</i>	Eurasian Oyster-catcher	226	236
<i>Pluvialis apricaria</i>	Eurasian Golden Plover	4	0
<i>Charadrius hiaticula</i>	Common Ringed Plover	1	0
<i>Vanellus vanellus</i>	Northern Lapwing	142	0
<i>Numenius arquata</i>	Eurasian Curlew	81	84
<i>Arenaria interpres</i>	Ruddy Turnstone	23	57
<i>Calidris canutus</i>	Red Knot	0	0
<i>Calidris alpina</i>	Dunlin	11	4
<i>Calidris maritima</i>	Purple Sandpiper	3965	2373
<i>Scolopax rusticola</i>	Eurasian Woodcock	9	0
<i>Gallinago gallinago</i>	Common Snipe	23	3
<i>Actitis hypoleucos</i>	Common Sandpiper	1	0
<i>Tringa totanus</i>	Common Redshank	26	4
<i>Rissa tridactyla</i>	Black-legged Kittiwake	322	250
<i>Larus ridibundus</i>	Black-headed Gull	20	49
<i>Larus canus</i>	Mew Gull	169	154
<i>Larus fuscus</i>	Lesser Black-backed Gull	66	0
<i>Larus argentatus</i>	European Herring Gull	4920	7315
<i>Larus glaucooides</i>	Iceland Gull	5	5
<i>Larus hyperboreus</i>	Glaucous Gull	394	1
<i>Larus marinus</i>	Great Black-backed Gull	1242	1249

4. Sweden



© Leif Nilsson

Results of January 2020 counts of waterbirds along the Swedish coasts.

Fredrik Haas & Leif Nilsson
 Dept. of Biology, Biodiversity and Conservation Science,
 Lund University, Sölvegatan 37,
 S-223 62 Lund, Fredrik.haas@biol.lu.se, leif.nilsson@biol.lu.se



1. INTRODUCTION

Sweden with a coastline of around 2,400 km is situated in the northern part of Europe. At the Swedish west coast the water has a typical marine character, whereas the water at the east coast (Baltic Sea) is more or less brackish. In winter most waterbird habitats are found along the coasts as most inland waters except in the south are covered with ice. When the International Waterfowl Count

(IWC) started, the Baltic coast north of Stockholm archipelago was normally totally ice-covered. During cold winters the ice-coverage extended to the south of Sweden even if some open waters were still available in some places, especially around the island of Gotland. In later years winters have been milder and open water has been available also along more northerly areas of the east coast and to a large extent also in the inland of south Sweden.

The southern part of the Swedish coastline including the two large islands Öland and Gotland has an open coastline with a mix of beaches, shallow vegetated areas and moraine coasts. Extensive archipelagos with thousands of small islands and skerries are found along most of the Baltic coast, the archipelagos being widest in the Stockholm region (up to 70 km from the mainland to the outermost skerries).

In Sweden regular January counts have been undertaken every year since the start of the International Waterfowl Count in 1967. Every winter a network of sites (both coastal and inland) have been surveyed by a large number of volunteers. In addition to these annual counts large scale country-wide surveys were organized in 1971–1974, 1987 – 1989 (partial), 2004 and 2015 (see Nilsson & Haas 2016). The country-wide surveys included all inshore coastal waters (including the archipelagos) but not the offshore-areas, which were surveyed in 2007–2011 and 2016 (Nilsson 2016).

In this chapter we present estimates of the wintering waterbird populations based on the latest country-wide survey in 2015 and preliminary results from the 2020 January count.

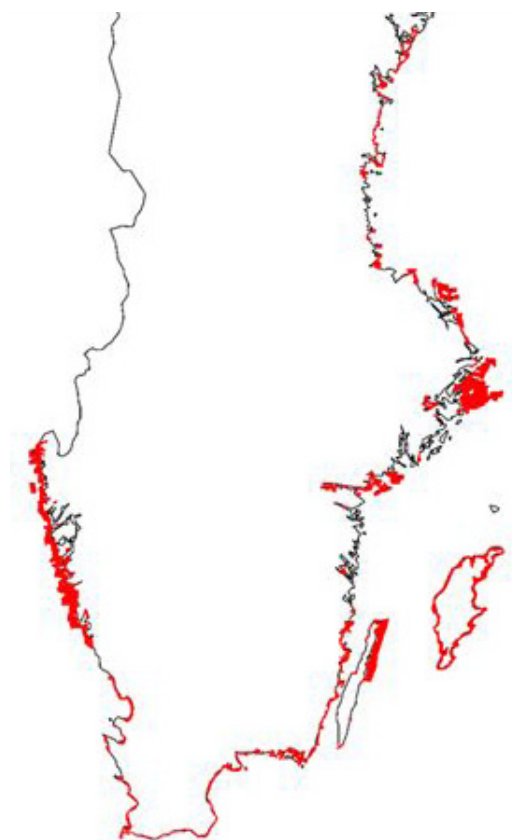


Figure 1: Map of south and central Sweden showing the distribution of Midwinter counts of coastal areas in January 2020.

2. METHODS

After the first years of the January counts in Sweden, the entire coastline (including the archipelagoes) was divided into counting units of suitable size with well-defined borders. Small units were preferred to guarantee that the counts of a unit could be completed during one day. For analysis, these units could then be grouped into larger functional units (or sites). During the annual counts, the units were covered from the ground by volunteers using binoculars and telescopes. Some areas in the archipelagoes were covered by boat during the annual counts. For the country-wide surveys a combination of extended ground counts and aerial surveys were used. During the first country-wide survey (in 1971–1974) a large number of sites were covered in the archipelagoes thanks to cooperation with the Swedish Coastguard. At the country-wide survey in 2015 it was not possible to cover all archipelagoes with total counts, instead parts of these areas were sampled by aerial line transects. The offshore areas were

sampled by aerial strip surveys in 2007–2011 and 2016. For details on survey methods see Nilsson & Haas 2016, Nilsson 2016. The survey in 2020 was based on a combination of air-, boat-, and land-based counts (see Fig. 1 for the geographical coverage).

The Swedish midwinter counts cover ducks, geese, swans, grebes, divers, coot, herons and cormorants. In the last four winters waders have also been included. Gulls are not counted.

3. RESULTS

The total estimated wintering populations of different waterbird species in inshore coastal Swedish waters was estimated to be 616,000 individuals at the total survey in January 2015 (Table 1). This estimate does not include the mainly offshore species Long-tailed Duck *Clangula hyemalis*, Common Scoter *Melanitta nigra* and Velvet Scoter *Melanitta fusca*. A small proportion of the Long-tailed Ducks can be observed from the shore at the ground counts but the absolute majority in Swedish waters are found on offshore banks in the central parts of the Baltic Sea. The number of Long-tailed Ducks was estimated to be about 370,000 within the Swedish Exclusive Economic Zone of the Baltic Sea in the winter of 2016 (Nilsson 2016). Table 1 also shows preliminary totals for the 2020 midwinter count. In all 864 coastal sites (Fig. 1) were counted by 174 observers. In the archipelagoes 124 counting units were covered with boat and 111 from air. No less than 629 coastal sites were surveyed by ground-based voluntary observers.

4. DISCUSSION

All species wintering in the inshore parts of Swedish coastal waters have increased markedly during the past 50 years (for details see Nilsson & Haas 2016). Some species, which were hardly seen during the counts in the first years, such as Wigeon *Mareca penelope* have established a regular wintering habit in south Sweden with 8.770 individuals at the country wide survey in 2015. The increasing wintering populations in Swedish inshore waters are clearly an effect of the milder winters in more recent years.

The annual midwinter counts of waterbirds include a reasonably high proportion of the waterbirds that are estimated to winter at the Swedish coast. For a species like the Mallard about 75% of the estimated population was actually counted in January 2020. The most numerous species in the dataset from 2020 was the Tufted Duck with

91,589 observed individuals, which can be compared to an estimated number of about 182,000 in year 2015. This species is the dominating diving duck species in inshore Swedish coastal waters during the winter. The counts in 2020 accounted for close to 50% of the estimated population of wintering Goldeneyes in coastal waters. The west coast harbors the vast majority of Eiders wintering in Sweden. This area was surveyed with the same methods in 2015 and 2020, and the coverage was about the same. Thus, the number of Eiders should be directly comparable. Although, carefullness is needed when comparing only two time points, the results indicate a heavy decline.

Some species showed a clear increase between 2015 and 2020. Even if the counts in 2020 did not cover all coastal areas, more individuals of Wigeon, Teal, Gadwall and Pintail were observed in 2020 than was estimated for 2015. These species were all hardly seen in the early years of midwinter counts, their increase being an effect of spreading north in response to milder winters. Not only climate change has benefited the number of waterfowls wintering in Sweden. The amount of small fish has increased markedly, most likely as a

result of over-fishing and eutrophication, which in turn has been favorable for fish eating species. On the other hand, benthic feeding species as a group, show a negative trend in the Swedish Baltic Sea during the past 30 years. The reason for this remains unclear.

Acknowledgements

Over the years several hundred observers have taken part in January counts, without their help we had not been able to cover so many sites as we did. Financial support to the project has been obtained from the Swedish Environmental Protection Agency.

References

Nilsson, L. 2016. Changes in numbers and distribution of wintering Long-tailed Ducks *Clangula hyemalis* in Swedish waters during the last fifty years. *Ornis Svecica* 26:162-176.

Nilsson, L. & Haas, F. 2016. Distribution and numbers of wintering waterbirds in Sweden 2015 and changes during the last fifty years. *Ornis Svecica* 26:3-54.

Table 1: Estimated totals for waterbird species in Swedish coastal waters at the country-wide survey in 2015 together with preliminary totals for the Swedish coast from the annual sample counts in January 2020. Goose numbers are from coastal as well as inland localities. NA = data not available. Gulls are not included.

Scientific name	English name	2015	2020
<i>Cygnus olor</i>	Mute Swan	50,500	19,533
<i>Anser fabalis</i>	Bean goose	41,367	37,926
<i>Anser brachyrhynchus</i>	Pink-footed goose	129	468
<i>Anser anser</i>	Greylag goose	37,907	49,026
<i>Anser albifrons</i>	Greater white-fronted goose	10,503	4,759
<i>Branta canadensis</i>	Canada goose	37,801	45,786
<i>Branta leucopsis</i>	Barnacle goose	26,488	68,521
<i>Clangula hyemalis</i>	Long-tailed Duck	370,000	NA
<i>Somateria mollissima</i>	Common Eider	52,580	20,494
<i>Melanitta fusca</i>	Velvet Scoter	8,166	2,788
<i>Melanitta nigra</i>	Common Scoter	5,543	4,788
<i>Bucephala clangula</i>	Common Goldeneye	87,000	41,626
<i>Mergellus albellus</i>	Smew	8,007	4,166
<i>Mergus merganser</i>	Goosander	35,000	11,159
<i>Mergus serrator</i>	Red-breasted Merganser	5,196	4,653
<i>Tadorna tadorna</i>	Common Shelduck	112	172
<i>Aythya ferina</i>	Common Pochard	1,217	1,696
<i>Aythya fuligula</i>	Tufted Duck	182,000	91,589
<i>Aythya marila</i>	Greater Scaup	26,853	21,524
<i>Spatula clypeata</i>	Northern Shoveler	1	23
<i>Mareca strepera</i>	Gadwall	114	946
<i>Mareca penelope</i>	Eurasian Wigeon	8,771	15,096

Scientific name	English name	2015	2020
<i>Anas platyrhynchos</i>	Mallard	87,000	64,843
<i>Anas acuta</i>	Northern Pintail	25	291
<i>Anas crecca</i>	Common Teal	496	2,844
<i>Tachybaptus ruficollis</i>	Little Grebe	35	119
<i>Podiceps grise-gena</i>	Red-necked Grebe	20	48
<i>Podiceps cristatus</i>	Great Crested Grebe	2,733	3,592
<i>Podiceps auritus</i>	Horned Grebe	86	74
<i>Fulica atra</i>	Common Coot	11,863	23,991
<i>Gavia stellata</i>	Red-throated Loon	124	66
<i>Gavia arctica</i>	Arctic Loon	36	88
<i>Ardea cinerea</i>	Grey Heron	606	1,355
<i>Ardea alba</i>	Great White Egret	0	1
<i>Gulosus aristotelis</i>	European Shag	23	802
<i>Phalacrocorax carbo</i>	Great Cormorant	14,258	10,996
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	NA	11
<i>Pluvialis apricaria</i>	Eurasian Golden Plover	NA	65
<i>Vanellus vanellus</i>	Northern Lapwing	NA	47
<i>Numenius arquata</i>	Eurasian Curlew	NA	286
<i>Calidris maritima</i>	Purple Sandpiper	NA	782
<i>Tringa totanus</i>	Common Redshank	NA	26

5. Finland



© Aleksi Lehikoinen

January 2020 International Waterbird Census (IWC) in Finland

Aleksi Lehikoinen¹, Tero Toivanen² and Markku Mikkola-Roos³

¹Finnish Museum of Natural History. P.O. Box 17, FI-00014, University of Helsinki, Finland,

²BirdLife Finland. Annankatu 29 A 16, FI-00100 Helsinki, Finland,

³Finnish Environmental Institute. Latokartanonkaari 11, FI-00790 Helsinki, Finland

coastal areas are ice covered already in January, which is the key limiting factor for wintering waterbirds. However, reduced ice cover due to the climate change has increased habitat availability, and thus the number of wintering waterbirds has greatly increased in Finland in recent years (Lehikoinen et al. 2013).

IWC has been conducted in Finland since 1957 as a part of national winter bird monitoring scheme. The number of routes has been around 500–600 in recent years. The first national estimate of the total numbers of wintering waterbirds, which also included excessive counts outside the standard routes, was made in 2016 (Lehikoinen et al. 2017). In this summary, we present the total count estimates of waterbird based on counts in January 2016 as well as annual IWC totals during 2018–2020. Results for 2020 are preliminary.



1. INTRODUCTION

Finland has a long coast line and a large archipelago in the Baltic Sea including large areas of shallow waters suitable especially for diving ducks and swans. In addition, there are a large number of lakes inland. In most years, most of the waters including all inland lakes and the majority of the

2. METHODS

The annual IWC data from Finland is mainly based on numbers from standard winter bird count routes, in which the waterbirds observations are made from land as a rule. In total, there were 619–639 routes covered around the new year during years 2018–2020 (Figure 1). In January 2016 and 2020, additional surveys were organized also outside these routes, being partly coordinated by the local ornithological societies.

In addition, four boat surveys and aerial surveys including line transects were organized

(2,950 and 4,000 kilometres in 2016 and 2020, respectively) altogether (Figure 2). The aerial surveys were partly conducted in February due to unfavourable weather conditions in January. The January 2016 was cold and large part of the inner archipelago and coastal waters were frozen during the first days of the month whereas January 2020 was extremely mild and also some inland lakes in Southern Finland were ice free. Based on all the surveys total winter population sizes were estimated in 2016 covering also birds wintering outside survey sites.

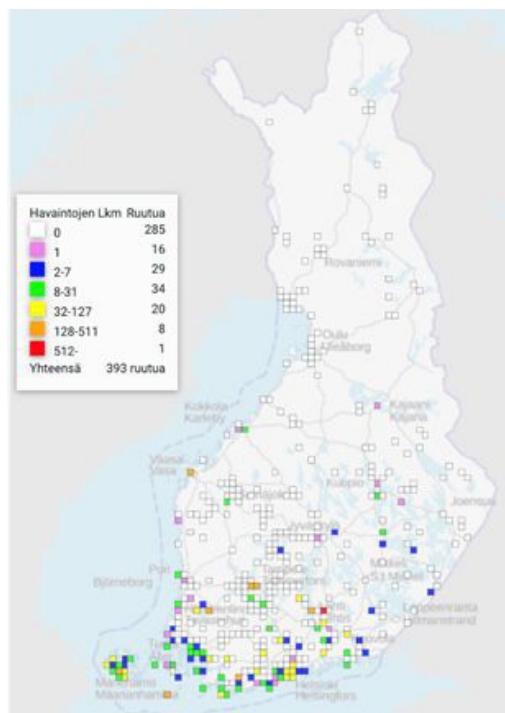


Figure 1 Locations of Finnish winter bird count routes in 10 km x 10 km grids in January 2020. Colours indicate abundances of observed Mallards *Anas platyrhynchos* and white grids are survey sites without Mallard observations.

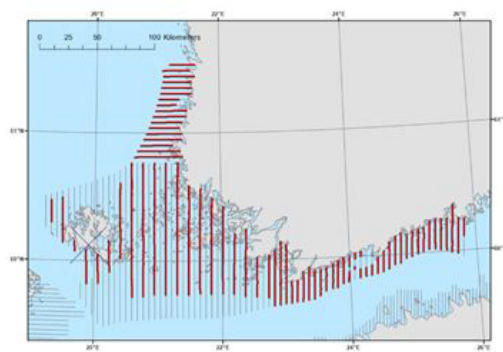


Figure 2. Transect lines of the aerial surveys in the Finnish archipelago conducted in January-February 2020

3.RESULTS

Altogether over 170,000 waterbirds were estimated to winter in Finland in January 2016 (Table 1). The variation in annual mid-winter counts of years 2018–2020 are also shown in Table 1. The results of the additional aerial survey in 2020 are presented as well in Table 1. Total estimates for 2020 on the basis of midwinter-, and additional counts will become available after further analyses.

4. DISCUSSION

As the numbers of wintering waterbirds have increased in Finland only recently due to the reduced ice cover, most of the important wintering areas still lack legal protection. The wintering areas might be affected by e.g. offshore wind farms which are currently being planned to several locations off the Finnish coast, including also IBA areas. The intense shipping traffic especially on the Gulf of Finland poses a risk of oil spills, which could be detrimental for e.g. the wintering areas of several diving duck species. There are no reliable estimates about the bycatch mortality in Finland, although it is supposed to be small compared to e.g. southern Baltic Sea. Eutrophication of the Baltic Sea can change the plant, invertebrate and fish communities in the long-term affecting the food availability of wintering waterbirds. Recreational boating can also be important cause of disturbance in some important wintering sites.

Acknowledgements

We are grateful to all of the volunteer birdwatchers participating to the data collection. Boat surveys were conducted in collaboration with the Finnish Border Guard and the Ministry of Environment funded the aerial surveys.

References

- Fraixedas, S., Lehikoinen, A. & Lindén, A. 2015: Impact of climate and land-use change on wintering bird populations in Finland. – *Journal of Avian Biology* 46: 63–72.
- Lehikoinen, A., Jaatinen, K., Vähätalo, A., Clausen, P., Crowe, O., Deceuninck, B., Hearn, R., Holt, C. A., Hornman, M., Keller, V., Nilsson, L., Langendoen, T., Tománková, I., Wahl, J. & Fox, A. D. 2013: Rapid climate driven shifts in wintering distribution of three waterbird species. – *Global Change Biology* 19: 2071–2081.

Lehikoinen, A., Kuntze, K., Lehtiniemi, T., Mikkola-

Roos, M. & Toivanen, T. 2017: Winter population estimates of waterbirds in Finland in January 2016. – Linnut -vuosikirja 2016: 6–15.

Pavón-Jordán, D., Fox, A. D., Clausen, P., Dagys, M., Deceuninck, B., Devos, K., Hearn, R., Holt, C., Hornman, M., Keller, V., Langendo- en, T., Ławicki, Ł., Lorentsen, S. H., Luigujõe, L., Meisser, W., Musil, P., Nilsson, L., Paquet, J.-Y., Stipniece, A., Stroud,

D. A., Wahl, J., Zenallo, M. & Lehikoinen, A. 2015: Climate driven changes in winter abundance of a migratory waterbird in relation to Eu protected areas. – Diversity and Distribution 21: 571–582.

Table 1. Annual totals of observed waterbirds during yearly mid-winter (IWC) counts 2018–2020. Under 2020 air are the raw counts of the aerial surveys (c. 2,950 km). Also given are the Total Winter population estimates of waterbirds in Finland during January 2016 based on full area surveys (Lehikoinen et al. 2017), NA = Not available.

Scientific name	English name	2018 IWC	2019 IWC	2020 IWC	2020 air	Total 2016
<i>Cygnus olor</i>	Mute Swan	2,185	2,475	2,541	5,832	9,130
<i>Cygnus cygnus</i>	Whooper Swan	1,442	768	1,180	17	4,091
<i>Cygnus columbianus</i>	Tundra Swan	1	0	1	0	0
<i>Branta leucopsis</i>	Barnacle Goose	3	1	0	0	5
<i>Branta canadensis</i>	Canada Goose	76	2	673	0	78
<i>Clangula hyemalis</i>	Long-tailed Duck	4,949	1,923	1,523	7,820	20,530
<i>Somateria mollissima</i>	Common Eider	2	4	0	0	38
<i>Polysticta stelleri</i>	Steller's Eider	0	0	0	0	12
<i>Melanitta fusca</i>	Velvet Scoter	66	55	11	20	411
<i>Melanitta nigra</i>	Common Scoter	52	90	32	53	866
<i>Bucephala clangula</i>	Common Goldeneye	3,906	3,787	3,683	3,480	21,995
<i>Mergellus albellus</i>	Smew	198	120	59	43	1,277
<i>Mergus merganser</i>	Goosander	5,890	5,436	5,637	2,528	23,940
<i>Mergus serrator</i>	Red-breasted Merganser	97	56	11	16	324
<i>Aythya ferina</i>	Common Pochard	1	0	0	0	21
<i>Aythya fuligula</i>	Tufted Duck	7,691	4,510	11,783	2,246	56,631
<i>Aythya marila</i>	Greater Scaup	28	5	31	0	93
<i>Spatula clypeata</i>	Northern Shoveler	0	0	1	0	1
<i>Mareca strepera</i>	Gadwall	0	1	0	0	1
<i>Mareca penelope</i>	Eurasian Wigeon	2	2	1	0	15
<i>Anas platyrhynchos</i>	Mallard	7,280	10,790	7,051	343	32,020
<i>Anas crecca</i>	Common Teal	5	5	6	0	50
<i>Tachybaptus ruficollis</i>	Little Grebe	1	4	0	0	18
<i>Podiceps grisegena</i>	Red-necked Grebe	0	0	0	0	5
<i>Podiceps cristatus</i>	Great Crested Grebe	4	1	2	0	41
<i>Fulica atra</i>	Common Coot	37	3	2	0	210
<i>Gavia stellata</i>	Red-throated Loon	5	1	2	0	50
<i>Gavia arctica</i>	Arctic Loon	3	4	2	0	21
<i>Phalacrocorax carbo</i>	Great Cormorant	271	209	207	54	1,042
<i>Calidris maritima</i>	Purple Sandpiper	135	234	173	84	720
<i>Larus ridibundus</i>	Black-headed Gull	92	73	44	2	390
<i>Larus canus</i>	Mew Gull	1,578	1,012	1,083	1,891	NA
<i>Larus argentatus</i>	European Herring Gull	5,508	4,160	4,180	826	NA
<i>Larus hyperboreus</i>	Glaucous Gull	0	0	2	0	NA
<i>Larus marinus</i>	Great Black-backed Gull	360	233	304	50	NA

6. Estonia



© Leho Luigujõe

Results of January 2020 counts of waterbirds in Estonia

Leho Luigujõe, Estonian Ornithological Society, Veski 4, Tartu, Estonia & Estonian University of Life Sciences, Kreutzwaldi 1, Tartu, Estonia



1. INTRODUCTION

Mid-winter counts (IWC) in Estonia were conducted for the first time in the winter of 1960/61. The project was run by the Baltic Commission for the Study of Bird Migration. In 1967 Estonia was one of the first to join the International Water-

bird Census (IWC) project, led by International Waterfowl Research Bureau (IWRB). From 1991 the project has been managed by the Estonian Ornithological Society. Initially the concept was an annual complete count, but starting 1991 the project was changed into a traditional monitoring programme, where counts are held on monitoring sites. From 1996 onward the mid-winter count is a part of the Estonian State Monitoring Programme. The estimation of wintering waterfowl was done by the Commission of Bird Numbers in The Estonian Ornithological Society.

2. METHODS

Most of the data of the IWC are collected by volunteers. Numbers of observers in Estonia are between 200 and 300. The count is held in January with centralised dates in the middle of the month. Estonian waters have been divided into 7 main sections, 20 subsections and 338 counting units (Figure 1). Depending on ice conditions and the coverage areas the coast of Estonia has been divided into monitoring and non-monitoring units. There are 98 monitoring sites in total on Estonian coast and 40 sites inland.

Aerial survey took place in winter 2016. Transects were placed every 3 km. Total length of transects are 7,500 km (Figure 2). Each transect was flown one time in winter season. Counts were performed in favourable conditions following standard methods. Distance sampling was used. All observations were attributed to one of

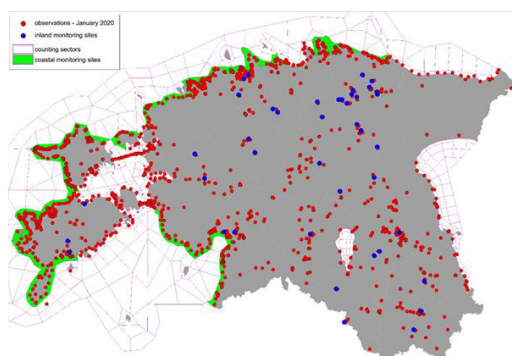


Figure 1. Mid-winter count in Estonia in January 2020

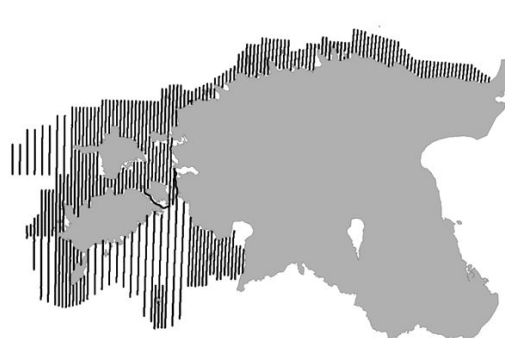


Figure 2. Aerial transects of waterbird count in Estonian coastal waters in the winter 2016. Map with indication of sites covered or indication of parts of the coast/land covered.

four counting belts. Density surface maps were calculated for all species and species groups (like fish and benthos eaters)

3. RESULTS

Table 1: Numbers of wintering waterbirds in Estonian monitoring sites counted in 2018–2020 based on the IWC data (coastal sites only) Also given is the status and numbers of wintering waterbirds in Estonia (2013–2017) (Elts et al. 2019) updated by Leho Luigujõe, based on data from IWC and aerial surveys. Method: 1 – Complete count (exact census in entire or approximately entire Estonia); 2 – Expert estimate (estimation by specialists studying the species); 3 – Compilation (consolidation of various sources, including literature and projects data of different areas by non-expert); 4 – Approximate estimation according to previous data and recent known trend; 5 – Rough estimation – based on Estonian regional estimations and density of population in neighbouring countries (Southern Finland, Latvia). Reliability: A – reliable numerical data concerning last years; B – rate of occurrence is generally well known, but quantitative data is insufficient or incomplete; C – (up-to-date) data is (almost) missing. NA= not available.

4. DISCUSSION

Main threats for waterbirds are by-catch and small oilspills. Some pressure expected in future concerning off-shore powerplants.

Acknowledgements

Acknowledgements for observers (275 observers in the year 2020)

Funding: Environment Agency of Estonia, En-

vironmental Board of Estonia, Estonian University of Life Sciences, The Cohesion Fund EU.

Literature

Elts, Jaanus; Leito, Aivar; Leivits, Agu; Luigujõe, Leho; Nellis, Renno; Ots, Margus; Tammekänd, Indrek & Väli, Ülo; (2019). Status and numbers of Estonian birds, 2013 - 2017. *Hirundo*, 32(1), 1 - 39. (in Estonian with English summary), https://www.eoy.ee/hirundo/files/Elts_et_al_2019-1.pdf

Scientific name	English name	2018	2019	2020	Totals estimated 2013-2017
<i>Cygnus olor</i>	Mute Swan	6,966	12,699	8,566	8,000-17,000
<i>Cygnus cygnus</i>	Whooper Swan	1,595	635	1,177	1,000-3,000
<i>Cygnus columbianus</i>	Tundra Swan	2	8	0	5-30
<i>Branta bernicla</i>	Brent Goose	0	0	0	0-1
<i>Branta leucopsis</i>	Barnacle Goose	1	71	0	0-10
<i>Branta canadensis</i>	Canada Goose	28	0	0	1-30
<i>Anser anser</i>	Greylag Goose	2	0	1	0-5
<i>Anser fabalis</i>	Bean Goose	2	0	0	0-5
<i>Anser albifrons</i>	Greater White-fronted Goose	0	0	4	0-5
<i>Clangula hyemalis</i>	Long-tailed Duck	17,583	15,930	17,271	100,000-500,000
<i>Somateria mollissima</i>	Common Eider	4	4	5	10-30
<i>Polysticta stelleri</i>	Steller's Eider	388	265	266	800-1,500
<i>Melanitta fusca</i>	Velvet Scoter	415	298	393	2,000-10,000
<i>Melanitta nigra</i>	Common Scoter	517	310	531	12,000-240,000
<i>Bucephala clangula</i>	Common Goldeneye	12,131	10,814	10,359	30,000-50,000
<i>Mergellus albellus</i>	Smew	1,744	1,524	1,524	1,000-3,000
<i>Mergus merganser</i>	Goosander	7,435	8,146	5,395	4,000-22,000
<i>Mergus serrator</i>	Red-breasted Merganser	1,376	893	1,081	500-2,500
<i>Tadorna tadorna</i>	Common Shelduck	0	1	0	NA
<i>Aythya ferina</i>	Common Pochard	6	2	27	5-30
<i>Aythya fuligula</i>	Tufted Duck	5,755	3,898	9,107	3,000-5,000
<i>Aythya marila</i>	Greater Scaup	433	322	2,152	300-3,500
<i>Spatula clypeata</i>	Northern Shoveler	1	0	0	NA
<i>Mareca strepera</i>	Gadwall	83	6	61	0-5
<i>Mareca penelope</i>	Eurasian Wigeon	42	9	30	10-50
<i>Anas platyrhynchos</i>	Mallard	21,982	15,927	16,252	16,000-21,000
<i>Anas acuta</i>	Northern Pintail	8	2	7	NA
<i>Anas crecca</i>	Common Teal	185	21	45	20-00
<i>Tachybaptus ruficollis</i>	Little Grebe	13	13	18	15-30
<i>Podiceps grisegena</i>	Red-necked Grebe	16	1	5	5-20
<i>Podiceps cristatus</i>	Great Crested Grebe	58	92	128	50-250
<i>Podiceps auritus</i>	Horned Grebe	9	2	25	1-20
<i>Rallus aquaticus</i>	Western Water Rail	0	8	2	10-50
<i>Gallinula chloropus</i>	Common Moorhen	4	8	0	1-10
<i>Fulica atra</i>	Common Coot	2,147	80	49	50-2,500
<i>Grus grus</i>	Common Crane	0	0	1	NA
<i>Gavia stellata</i>	Red-throated Loon	149	44	124	500-3,000
<i>Gavia arctica</i>	Arctic Loon	29	1	25	50-350
<i>Ciconia ciconia</i>	White Stork	0	0	0	0-3
<i>Ardea cinerea</i>	Grey Heron	700	115	245	150-600
<i>Ardea alba</i>	Great White Egret	0	6	7	0-3
<i>Phalacrocorax carbo</i>	Great Cormorant	567	540	533	100-1,000
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	0	0	2	NA
<i>Pluvialis apricaria</i>	Eurasian Golden Plover	0	0	1	NA
<i>Vanellus vanellus</i>	Northern Lapwing	4	0	3	NA
<i>Numenius arquata</i>	Eurasian Curlew	0	0	3	NA
<i>Arenaria interpres</i>	Ruddy Turnstone	1	0	0	0-1
<i>Calidris maritima</i>	Purple Sandpiper	48	85	169	50-150
<i>Scolopax rusticola</i>	Eurasian Woodcock	0	1	2	5-50
<i>Gallinago gallinago</i>	Common Snipe	8	1	13	5-30
<i>Lymnocyptes minimus</i>	Jack Snipe	0	0	1	1-20
<i>Rissa tridactyla</i>	Black-legged Kittiwake	1	0	0	0-1
<i>Larus ridibundus</i>	Black-headed Gull	1,001	803	937	500-3,000
<i>Larus canus</i>	Mew Gull	4,932	5,818	2,648	50,000-100,000
<i>Larus fuscus</i>	Lesser Black-backed Gull	0	1	0	0-3
<i>Larus argentatus</i>	European Herring Gull	5,781	7,455	5,111	30,000-50,000
<i>Larus cachinnans</i>	Caspian Gull	6	0	0	NA
<i>Larus glaucooides</i>	Iceland Gull	0	0	0	0-1
<i>Larus hyperboreus</i>	Glaucous Gull	0	0	1	0-3
<i>Larus marinus</i>	Great Black-backed Gull	254	208	308	500-1,000

7. Latvia



© Girts Straziņš

Results of waterbird counts in Latvia, January 2020

Antra Stīpniece, Latvian
Ornithological Society



1. INTRODUCTION

IWC is an international public monitoring project launched in Europe in 1967. It is coordinated by Wetlands International. In January 2020, the survey took place for the 54th time in Latvia. Since 2016, wintering waterbirds surveys have been part of the Latvian Biodiversity Monitoring Program and are financed by Latvian Nature Conservancy Board.

Aims and tasks

To obtain data on wintering of waterfowl on the coast (along its entire length) and in at least 130 inland places. To obtain data on wintering of the Whooper Swan *Cygnus cygnus* and the Tundra Swan *Cygnus bewickii* and geese. Identify trends in changes in the number of common species.

2. METHODS

Counts should be carried out every year in the same sites, the boundaries of which do not change from year to year. Wintering sites shall be surveyed on the central dates of the survey (11/12 January in 2020) or on the day as close as possible to the central dates with suitable weather conditions for the survey (good visibility, not disturbed by waves and fog). Record the species of birds, the number, if possible, sex, age, census accuracy, ice condition (what % of water body is frozen) and the extent to which the census is affected by weather and disturbance. It is also reported if the place is completely frozen or dry and there are no birds. The survey of wintering waterfowl on the coast was carried out on foot along the shore, grouping observations in 1 km sections, the boundaries of which were determined using GPS devices.

Between 4 and 26 January, 965 possible wintering places for waterfowl were inspected, including the entire available shoreline, 558 places have been visited for the first time (Figures 1 and 2). This can be explained by the fact that additional places have been counted due to the census of swans, and by the presence of waterfowl in places previously not used for wintering due to the warm winter. According to www.meteo.lv, the average air temperature in Latvia in January 2020 was +3.1 °C, which is 6.3 °C above the monthly norm. It has become the warmest January in the history of observations.

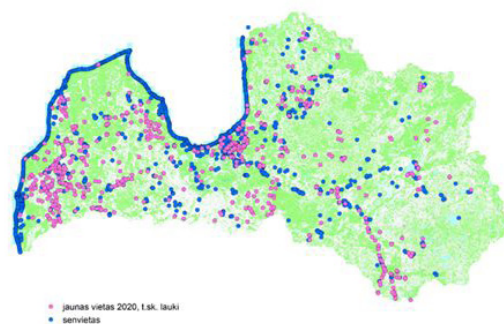


Figure 1 Distribution of IWC sites in January 2020 blue- old sites, pink – new ones

On the central dates 42% of site visits were made. If more than one count is received for one site, the one closest to the central date, performed by the same observer as in previous years, or the one where the site survey is more complete, was used.

3. RESULTS

A total of 94,377 birds of 47 species were counted – 43,620 on the coast and 50,757 inland. More than 14,116 birds were observed outside the boundaries of previously known observation sites. Although a larger area than in other years was inspected the total number of birds observed was lower than in 2019 (121,221), (Table 1).

According to the data of www.latvijaspurtni.lv, the number of the White-fronted Geese and Greylags began to increase at about January 20th.

For the Goosander, Goldeneye and Smew, the trend of changes over the last five years is steep decline. This is presumably due to the dispersal of birds in the many available ice-free waters. The trend for long-term changes in these species is a moderate increase. The long term moderate increase and the unclear trends over the last 5 years for Mallard, Tufted Duck, Long-tailed Duck, Herring Gull, Whooper Swan are apparently also associated with dispersal over a large area away from ancient concentrations and coastal areas.

At the same time, the availability of many unfrozen places has caused a steep increase in the last 5 years for species that have had little habitat in Latvia so far in the winter – Grey Heron, Great Egret, Coot. For the Great Egret and the Mute Swan these trends could be the result not only of regrouping but also of more global population growth.

For a number of species, both fish eaters (Great Crested Grebe, Cormorant) and benthic eaters (Velvet Scoter and Common Scoter), most of these winterers have been observed on the usually ice-free coast of the Baltic Sea. The steep increase over a 5-year period could be due to an improvement in feeding conditions on the coast, an earlier start to migration (for the Velvet Scoter)

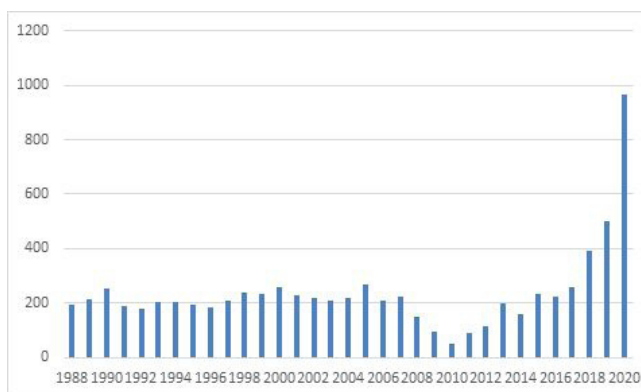


Figure 2. Number of sites counted in Latvia.

4. DISCUSSION

The unusually warm winter showed the scene of autumn (Arctic Loons, Long-tailed Ducks, Velvet Scoters and Scaup inland) or early spring (one Great Bittern singing quietly in Lake Kanjieris, Whooper Swans in pairs in nesting habitats) in some places. At the same time, geese migration had not started yet on the central dates of the cen-

or an increase in the entire Baltic population (for the Cormorant). Although fish-eating, the number of divers in coastal sections is stable, the changes in the short term are unclear. These species use deeper waters more than the Great crested grebe and the Cormorant.

Acknowledgements

Many thanks to all observers (169 in 2020). Funding was received from the Latvian Nature Conservancy Board.

Table 1. Waterbirds identified to species in mid-January 2020 in Latvia.

Scientific name	English name	Number	Scientific name	English name	Number
<i>Cygnus olor</i>	Mute Swan	7,178	<i>Podiceps cristatus</i>	Great Crested Grebe	2,550
<i>Cygnus cygnus</i>	Whooper Swan	1,401	<i>Podiceps auritus</i>	Horned Grebe	1
<i>Branta leucopsis</i>	Barnacle Goose	7	<i>Rallus aquaticus</i>	Western Water Rail	5
<i>Branta canadensis</i>	Canada Goose	11	<i>Gallinula chloropus</i>	Common Moorhen	2
<i>Anser anser</i>	Greylag Goose	67	<i>Fulica atra</i>	Common Coot	1,555
<i>Anser fabalis</i>	Bean Goose	78	<i>Grus grus</i>	Common Crane	6
<i>Anser albifrons</i>	Greater White-fronted Goose	12	<i>Gavia stellata</i>	Red-throated Loon	487
<i>Clangula hyemalis</i>	Long-tailed Duck	13,786	<i>Gavia arctica</i>	Arctic Loon	89
<i>Melanitta fusca</i>	Velvet Scoter	3,328	<i>Ciconia ciconia</i>	White Stork	1
<i>Melanitta nigra</i>	Common Scoter	2,325	<i>Ardea cinerea</i>	Grey Heron	191
<i>Bucephala clangula</i>	Common Goldeneye	6,610	<i>Ardea alba</i>	Great White Egret	110
<i>Mergellus albellus</i>	Smew	47	<i>Botaurus stellaris</i>	Eurasian Bittern	1
<i>Mergus merganser</i>	Goosander	5,526	<i>Phalacrocorax carbo</i>	Great Cormorant	6,533
<i>Mergus serrator</i>	Red-breasted Merganser	327	<i>Scolopax rusticola</i>	Eurasian Woodcock	2
<i>Aix galericulata</i>	Mandarin Duck	1	<i>Lymnocyptes minimus</i>	Jack Snipe	1
<i>Aythya ferina</i>	Common Pochard	27	<i>Larus ridibundus</i>	Black-headed Gull	624
<i>Aythya fuligula</i>	Tufted Duck	1,711	<i>Larus canus</i>	Mew Gull	1,961
<i>Aythya marila</i>	Greater Scaup	87	<i>Larus fuscus</i>	Lesser Black-backed Gull	1
<i>Mareca strepera</i>	Gadwall	9	<i>Larus argentatus</i>	European Herring Gull	9,675
<i>Mareca penelope</i>	Eurasian Wigeon	23	<i>Larus cachinnans</i>	Caspian Gull	1
<i>Anas platyrhynchos</i>	Mallard	21,690	<i>Larus marinus</i>	Great Black-backed Gull	288
<i>Anas crecca</i>	Common Teal	31	<i>Alcedo atthis</i>	Common Kingfisher	42
<i>Tachybaptus ruficollis</i>	Little Grebe	6		ducks	2,995
<i>Podiceps grisegena</i>	Red-necked Grebe	1		gulls	2,371
				other water birds	567

8. Lithuania



© Igoris Semionovas

Results of January count 2020 of waterbirds in Lithuania

Laimonas Šniaukšta^{1,2}

¹On behalf of Lithuanian Ornithological Society, Naugarduko str. 47-3, LT-03208 Vilnius, Lithuania. ²Birds at river Nemunas near Kaunas



1. INTRODUCTION

Lithuania is a country in the Baltic region of Europe, situated on the eastern shore of the Baltic Sea. Lithuanian ecosystems include natural and semi-natural (forests, bogs, wetlands and meadows) and anthropogenic ecosystems. Winters in Lithuania used to be cold, when the temperature drops down to -20°C , most of open water is frozen

and wintering water birds could be found mainly at the sea or near power or hydroelectric power plants. As the climate warms, winters are increasingly warmer when water bodies do not freeze and wintering birds spread throughout the country.

IWC counts are organised every winter from 2010 in Lithuania. More than 30,000 birds are counted during winter counts with up to 70,000 birds during warm winters.

Main sites in Lithuania are: Baltic Sea coast, Lithuanian part of Kuršių Bay, Nemunas and Neris rivers near Kaunas City, Flooded meadows in Šilutė district (during warm winters).

2. METHODS

Counts were done at 51 sites by the volunteers mainly with a help of National and Regional parks and reserves employees. Main counts were carried out on January 10-12 (total January 9-18).

3. RESULTS

92 Observers registered more than 67,000 wintering birds. This winter was mild, waters not frozen and spread birds were observed across all the country. Mallard was the most numerous waterfowl species with total number of more than 28,800 registered birds. The second most abundant species was Common Goldeneye with a number of more than 7,900 and the third – Velvet Scoter with a number of more than 5,000 birds registered.

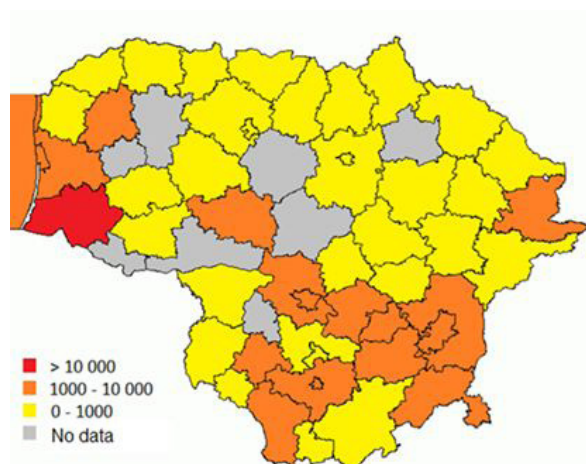


Figure 1: Map with indication of coverage of the country and total numbers of waterbirds counted in January 2020.

These three species are the most common during winter counts in Lithuania. Great Crested Grebe (~3,500) and Eurasian Coot (~3,400) were also numerous this year. Common Merganser was only sixth most numerous species (~2,600) during this count.

4. DISCUSSION

Mild winters makes it hard to have good coverage of wintering birds as they are spread through the country. Species like Common and Velvet Scoters, Long-tailed ducks are getting less numerous at the Lithuanian Baltic Sea coast. This could be the result of lack of food, change of wintering territories or bycatch and death of wintering birds in fishing nets. Also, species as Steller's Eider, which were a common wintering visitor, has totally disappeared at the Lithuanian Baltic Sea coast for more than 10 years now, because of change of the wintering territories to the Barents Sea.

At Nemunas river in Kaunas abundant gatherings of wintering swans is an annual event. During recent warm winters when the temperatures are mild and waters or the river not frozen kayaking became quite a popular activity. However, it was noticed that passing kayaks scares and flushes swans, some of which collides with electrical wires across the river and get killed or severely injured. Some preventive measures have been implemented: dedicated markings were placed on the wires and also informative messages were sent to the kayaking organizing parties with a request to avoid the territory.

Acknowledgements

Last winter 92 observers (most of them volunteers) took part in IWC, we thank them all very much.

Table 1: Waterbird species and numbers counted at the sites covered.

Scientific name	English name	total
<i>Branta leucopsis</i>	Barnacle Goose	19
<i>Anser anser</i>	Greylag Goose	53
<i>Anser fabalis</i>	Bean Goose	1
<i>Anser albifrons</i>	Greater White-fronted Goose	6
<i>Clangula hyemalis</i>	Long-tailed Duck	991
<i>Melanitta fusca</i>	Velvet Scoter	5,077
<i>Melanitta nigra</i>	Common Scoter	137
<i>Bucephala clangula</i>	Common Goldeneye	7,965
<i>Mergellus albellus</i>	Smew	219
<i>Mergus merganser</i>	Goosander	2,671
<i>Mergus serrator</i>	Red-breasted Merganser	5
<i>Aythya ferina</i>	Common Pochard	35
<i>Aythya fuligula</i>	Tufted Duck	604
<i>Aythya marila</i>	Greater Scaup	45
<i>Mareca strepera</i>	Gadwall	27

Scientific name	English name	total
<i>Mareca penelope</i>	Eurasian Wigeon	226
<i>Anas platyrhynchos</i>	Mallard	28,850
<i>Anas acuta</i>	Northern Pintail	6
<i>Anas crecca</i>	Common Teal	68
<i>Tachybaptus ruficollis</i>	Little Grebe	27
<i>Podiceps grisegena</i>	Red-necked Grebe	5
<i>Podiceps cristatus</i>	Great Crested Grebe	3,545
<i>Podiceps auritus</i>	Horned Grebe	2
<i>Ardea alba</i>	Great White Egret	182
<i>Phalacrocorax carbo</i>	Great Cormorant	465
<i>Larus ridibundus</i>	Black-headed Gull	696
<i>Larus canus</i>	Mew Gull	4,790
<i>Larus argentatus</i>	European Herring Gull	2,228
<i>Larus marinus</i>	Great Black-backed Gull	385

9. United Kingdom



© Teresa Frost

Results of January counts of waterbirds in the United Kingdom

Teresa Frost,
Wetland Bird Survey (WeBS), British
Trust for Ornithology, The Nunnery,
Thetford, Norfolk IP24 2PU, UK
teresa.frost@bto.org



1. INTRODUCTION:

The UK is a country with an extensive coastline, a maritime climate and a strategic geographic position on the East Atlantic Flyway. The combination makes it a favoured location for many waterbirds in winter.

The Wetland Bird Survey and its predecessors allow us to take a long view of waterbird population change in the UK, with counting at some sites being continuous since 1947. We can calculate population trends from the 1966/67 winter for most wildfowl species, 1974/75 for wader species,

and since at least 1993/94 for other waterbirds. WeBS is a partnership, with the survey run by a national coordination team at BTO and volunteer local coordinators for regions and estuaries.

In January 2019, the latest published survey, counts were carried out at 4,431 count units at 2,427 sites. It is likely that similar coverage was achieved in January 2020, with counts received for 4,263 count units so far.

2. METHODS

Almost all the major wetlands (estuaries, freshwater bodies and marshlands) of the UK are counted at least once each year. Most counts are carried out by volunteers, or a mixture of site wardens and volunteers. Coastal sites are counted at high tide when birds are roosting. Most counts are land based, but boats are used for access in some places. Large sites are sub-divided into count units. Many small sites are also counted.

Most sites are counted once a month throughout the year, on count dates set in advance to optimise counting at high tide during daylight for as many coastal sites as possible. The data from the January WeBS counts are submitted to IWC. The reporting year runs from July to June, so the consolidation of count unit data to site totals does not take place until the following winter and results are published after this in the spring. As this means that January 2020 UK totals are not yet available, the numbers here relate to recent years.



Figure 1: Map of WeBS sites counted at least once in the July 2018 – June 2019 reporting period.

3. RESULTS

Table 1 gives the five year average count for January 2015–2019, as January 2020 results are not yet published. The most important sites for waterbirds in the UK are large coastal estuarine wetlands, with those holding the biggest numbers of the species of interest of this report: The Thames Estuary, Blackwater Estuary, the Wash, and Humber Estuary are on the east coast of England. On the west coast, the Severn and the Dee Estuaries border England and Wales, Morecambe Bay and Ribble Estuary are in north-west England and Solway Estuary borders England and Scotland (combined totals of these sites are in Table 1).

For producing national population estimates, and depending on the species, modelling is used to extrapolate the counts to uncounted areas. The latest population estimates for Great Britain included a January estimate for some species (as well as peak winter estimates for 98 species or populations) and where available is also given in table 1. Source: Frost et al, 2019.

4. DISCUSSION

One important use of WeBS trends is in assessing species' status. In the most recently published Birds of Conservation Concern, Pochard and Ringed Plover were added to the national "Red list" due to declines of over 50% in their 25-year WeBS trends. More positively, UK WeBS trends for colonising species such as Little Egret and Great White Egret or species where there has been conservation effort such as Avocet have increased rapidly.

A key driver in the 1940s for setting up the counts was concern over habitat loss and development pressure. This is still the case today, and the WeBS dataset has been used to inform hundreds of development proposals on wetlands. In some cases this has played a major part in halting a detrimental development proposal. In other cases WeBS counts have informed requirements for compensatory wetland creation as mitigation for the loss of mudflats and other wetland habitats.

Year to year changes in populations are often in response to weather. For example, exceptionally cold weather in Eastern Europe in January 2017 pushed some birds to find refuge further west, in Britain.

Acknowledgements:

WeBS is a partnership jointly funded by the BTO, RSPB and JNCC, in association with WWT, with fieldwork conducted by volunteers. We are indebted to the time and skills of the 3,300 WeBS Counters who collected the data and the 140 volunteer Local Organisers who coordinate their efforts.

References

- Frost, T.M., Calbrade, N.A., Birtles, G.A., Mellan, H.J., Hall, C., Robinson, A.E., Wotton, S.R., Balmer, D.E. and Austin, G.E. 2020. *Waterbirds in the UK 2018/19: The Wetland Bird Survey*. BTO/RSPB/JNCC. Thetford.
- Frost, T.M., Austin, G.E., Hearn, R.D., McAvoy, S.G., Robinson, A.E., Stroud, D.A., Woodward, I.D. & Wotton, S.R. 2019. Population estimates of wintering waterbirds in Great Britain. *British Birds* 112: 130–14.

Table 1. Average counts for January 2015–2019 for East Atlantic Flyway focal species at the nine most important UK Estuaries, all other sites in the UK and total in the UK in that years. Also given are Great Britain January estimates based on Frost et al 2019. *Great Britain January estimates are not available for all species (NA), and do not include population estimates for Northern Ireland.

Scientific name	English name	Nine estuaries	All other sites	Total	GB January Estimate*
<i>Branta bernicla</i>	Brent Goose	32,969	63,512	96,481	98,900
<i>Branta leucopsis</i>	Barnacle Goose	14,516	8,152	22,668	NA
<i>Anser anser</i>	Greylag Goose	3,319	54,152	57,471	NA
<i>Somateria mollissima</i>	Common Eider	2,486	12,532	15,018	NA
<i>Tadorna tadorna</i>	Common Shelduck	16,482	30,044	46,526	47,000
<i>Spatula clypeata</i>	Northern Shoveler	1,885	14,367	16,252	19,000
<i>Mareca penelope</i>	Eurasian Wigeon	74,782	275,590	350,372	440,000
<i>Anas platyrhynchos</i>	Mallard	8,831	115,873	124,704	620,000
<i>Anas acuta</i>	Northern Pintail	6,188	12,464	18,652	19,000
<i>Anas crecca</i>	Common Teal	26,895	163,115	190,010	420,000
<i>Podiceps cristatus</i>	Great Crested Grebe	310	6,699	7,009	12,000
<i>Podiceps auritus</i>	Horned Grebe	5	181	186	NA
<i>Podiceps nigricollis</i>	Black-necked Grebe	2	74	76	99
<i>Platalea leucorodia</i>	Eurasian Spoonbill	1	48	49	NA
<i>Ardea alba</i>	Great White Egret	10	75	85	NA
<i>Phalacrocorax carbo</i>	Great Cormorant	2,785	17,549	20,334	45,000
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	100,285	100,403	200,688	260,000
<i>Recurvirostra avosetta</i>	Pied Avocet	1,636	6,016	7,652	7,800
<i>Pluvialis squatarola</i>	Grey Plover	10,435	14,187	24,622	29,000
<i>Charadrius hiaticula</i>	Common Ringed Plover	1,385	4,121	5,506	19,000
<i>Numenius phaeopus</i>	Whimbrel	1	17	18	17
<i>Numenius arquata</i>	Eurasian Curlew	20,832	40,732	61,564	100,000
<i>Limosa lapponica</i>	Bar-tailed Godwit	18,135	13,387	31,522	42,000
<i>Arenaria interpres</i>	Ruddy Turnstone	2,663	7,948	10,611	36,000
<i>Calidris canutus</i>	Red Knot	127,606	66,783	194,389	210,000
<i>Calidris alba</i>	Sanderling	3,123	5,356	8,479	18,000
<i>Calidris alpina</i>	Dunlin	145,056	151,660	296,716	320,000
<i>Calidris maritima</i>	Purple Sandpiper	24	1,016	1,040	8,900
<i>Tringa erythropus</i>	Spotted Redshank	13	26	39	49
<i>Tringa nebularia</i>	Common Greenshank	30	396	426	640
<i>Tringa totanus</i>	Common Redshank	20,659	41,903	62,562	77,000
<i>Larus ridibundus</i>	Black-headed Gull	19,727	172,496	192,223	NA
<i>Larus melanocephalus</i>	Mediterranean Gull	21	415	436	NA
<i>Larus canus</i>	Mew Gull	3,902	37,160	41,062	NA
<i>Larus fuscus</i>	Lesser Black-backed Gull	721	6,949	7,670	NA
<i>Larus argentatus</i>	European Herring Gull	10,334	65,395	75,729	NA
<i>Larus marinus</i>	Great Black-backed Gull	1,047	8,408	9,455	NA

10. Denmark



© Morten Scheller Jensen

The January 2020 count of waterbirds in Denmark

Preben Clausen, Rasmus Due Nielsen, Thomas Bregnballe, Jacob Sterup & Ib Krag Petersen, Department of Bioscience, Aarhus University, Denmark



1. INTRODUCTION

The Danish waterscape is characterized by a mixture of shallow coastal lagoons, estuaries, inlets, sounds and bays, and more open but relatively shallow offshore areas. Inland there are lakes and ponds, and an increasing number of restored wetlands. These provide a combination of habitats that embrace most waterbird communities. The Danish Wadden Sea and some few other large sites with intertidal mudflats holds thousands of waders. Lakes, lagoons and sheltered inshore waters provide roosting areas for thousands of swans and geese feeding inland. Waterbird censuses in Denmark have been undertaken on a regular basis since 1965, and is today embraced under NOVANA – the National Monitoring and Assess-

ment Programme for the Aquatic and Terrestrial Environment of Denmark.

The first 'complete' national census combining land-based counts of lakes and inshore waters with aerial surveys of offshore areas was conducted in November 1967. Since then such surveys has been undertaken in four autumns, 15 winters (2 in the 1960s, 3 in the 1970s, 3 in the 1980s, 2 in the 1990s, and 5 since 2000), two springs and five summers. The highest numbers of waterbirds are found in autumn and winter, where totals typically sum up to 1-2 million staging or wintering waterbirds. In years without complete midwinter censuses, Denmark contribute to the International Waterbird Census through a 'reduced site network', where 49 sites have been censused almost annually during 1987-2016, where 41 are counted from land and 8 from aircraft.

This programme is currently under revision and since 2017 more sites have been included in the count scheme. this means that more sites will be reported to the IWC, but due to logistics, manpower and financial limitations many large sites are not counted annually but in a rotation scheme, so data from specific sites will be provided from 3-4 out of 6 years in the coming years.

2. METHODS

The 2019/20 midwinter count scheme was planned to be the 16th complete national census. Despite a winter with many low-pressure passages and associated gales and rain, i.e. impossible count conditions, an almost full survey was nevertheless conducted, because we managed to staff two aircraft on several 'good days', made 15 aerial surveys

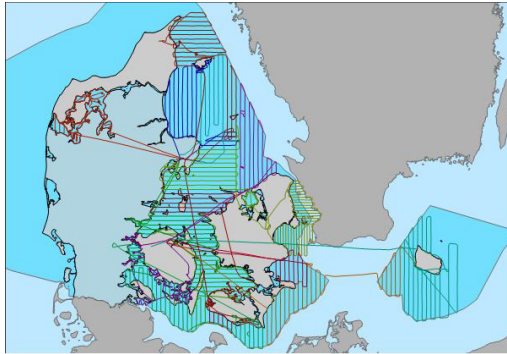


Figure 1: Survey routes of the 15 aerial flights conducted from late December 2019 to late February 2020. The map includes both surveys conducted as total counts and surveys conducted using the line-transect method.

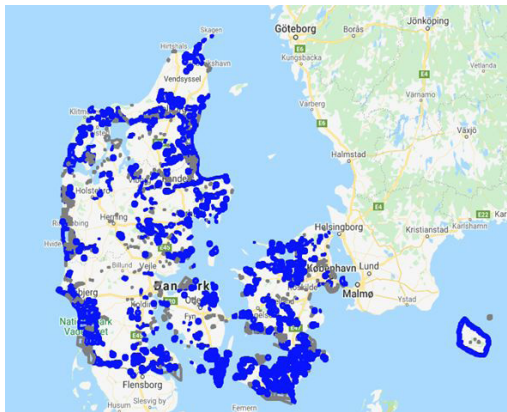


Figure 2: Map of Denmark highlighting midwinter 2020 coverage by land-based counts.

(82 survey hours) and almost got the full survey (Fig. 1). Two areas were not counted during late December-early March, i.e. the North Sea off the Wadden Sea, and the Wadden Sea itself. However, the latter was counted from land in mid-January, so for many species we probably have reasonable totals for this site anyway. The missing count offshore the Wadden Sea is problematic especially with regards to providing national totals for Common Scoter, as this site usually in other years have held 20–40 % of the wintering Danish population of the species.

During 3–26 January c. 150 observers (professional and amateur ornithologists, and state forest district reserve managers and wardens) contributed to the land-based counts, and reported numbers from c. 1,300 count-units. They also marked observations of waterbirds, mostly swan and goose flocks in agricultural areas, from c. 500 locations outside the count units (Fig. 2). Reporting of count results were made through an online reporting website, www.fugldata.dk, which is used both to manage the counters, site coverage, data inputs, and refunding observers expenditures on transport (car kilometers, ferries etc.).

3. RESULTS

National totals for winter 2019/2020 are far from being available, as we are still in the process of quality assessing aerial survey data, and have to check land-based counts for possible double entries. Minimum totals for selected species (East Atlantic Flyway focal species) and based on the land based counts only, is given in Table 1. An indication of totals in Denmark is also given through the results of the last complete 2016 midwinter census.

4. DISCUSSION

Note that for all species, 2020 totals will expectedly be remarkably higher, when numbers from aerial surveys and supplementary data from sites not covered by our network is included. This is especially true for species found in highest numbers offshore, i.e. *Somateria molissima*, where the majority are counted from aircraft. Supplementary data from BirdLife Denmark will also add more swans, geese and dabbling ducks. Totals for species marked with an * were not reported for the 2016 midwinter census, because they occur in much higher numbers in other parts of the year (where we have focused counts covering these), or because numbers counted will be underestimates. This is in particular the case for gulls, which are not counted and reported from all sites, and many gulls feed inland when counts are made, so for all gulls the numbers for 2020 are much lower than true numbers.

The national censuses have been used to identify sites of international and national importance for waterbirds. After the latest 2018 revision of designation and delineation of the Danish Natura 2000 network, 124 Special Protection Areas for Birds have been designated with reference to the EU Birds Directive Article 4. Of these sites approx. 80 have staging, molting or wintering waterbird species as qualifying species, and these and some further sites are designated for breeding waterbirds listed in Annex I of the Directive. In Denmark there are c. 90 shooting-free reserves like-wise designated to protect the staging and wintering waterbirds from hunting, and many of these reserves also restrict other recreational activities considered more disturbing, e.g. by introducing speed-limits for motorboats and areas where wind- and kite-surfing is prohibited.

Acknowledgements

Thanks to all observers and pilots engaged in making the 2020 midwinter census one of the hitherto most comprehensive surveys of waterfowl in our country. The NOVANA programme is funded by the Ministry of Environment and Food of Denmark and Department of Bioscience, Aarhus University.

Main sources

Clausen, P., Petersen, I.K., Bregnballe, T. & Nielsen, R.D. 2019. Trækfuglebestande i danske Fuglebeskyttelsesområder, 2004 til 2017. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi, 310 s. – Teknisk rapport nr. 148.

Clausen, P., Holm, T.E., Laursen, K., Nielsen, R.D. & Christensen, T.K. 2013. Rastende fugle i det danske reservatnetværk 1994-2010. Del 1: Nationale resultater. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi, 118 s. – Videnskabelig rapport fra DCE – Nationalt Center for Miljø og Energi nr. 72. <http://www.dmu.dk/Pub/SR72.pdf>

Fredshavn, J.R., Holm, T.E., Sterup, J., Pedersen, C.L., Nielsen, R.D., Clausen, P., Eskildsen, D.P. & Flensted, K.N. 2019. Størrelse og udvikling af fuglebestande i Danmark – 2019. Artikel 12-rapportering til Fuglebeskyttelsesdirektivet. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi, 46 s. – Videnskabelig rapport nr. 363.

Nielsen, R.D., Holm, T.E., Clausen, P., Bregnballe, T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. 2019. Fugle 2012–2017. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi, 264 s. – Videnskabelig rapport nr. 314.

Table 1. Preliminary land-based totals for midwinter 2020 for East Atlantic Flyway focal species. Also the numbers counted (both land- and aerial surveys) during the last complete 2016 midwinter survey are given. Numbers below 100 are accurate, between 100 and 10,000 rounded to nearest 100 birds, and above 10,000 to nearest 1000 birds. * not available.

Scientific name	English name	2,016	2020
<i>Branta bernicla</i>	Brent Goose	6,809	12,400
<i>Branta leucopsis</i>	Barnacle Goose	157,065	259,000
<i>Anser anser</i>	Greylag Goose	106,295	79,000
<i>Somateria mollissima</i>	Common Eider	396,000–592,000	45,000
<i>Tadorna tadorna</i>	Common Shelduck	21,020	21,000
<i>Spatula clypeata</i>	Northern Shoveler	168	600
<i>Mareca strepera</i>	Gadwall	188	3,500
<i>Mareca penelope</i>	Eurasian Wigeon	29,249	91,000
<i>Anas platyrhynchos</i>	Mallard	139,233	79,000
<i>Anas acuta</i>	Northern Pintail	7,026	14,000
<i>Anas crecca</i>	Common Teal	4,091	35,000
<i>Podiceps cristatus</i>	Great Crested Grebe	*	4,500
<i>Podiceps auritus</i>	Horned Grebe	*	7
<i>Podiceps nigricollis</i>	Black-necked Grebe	*	2
<i>Ardea alba</i>	Great White Egret	*	200
<i>Phalacrocorax carbo</i>	Great Cormorant	15,345	14,000
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	*	23,000
<i>Recurvirostra avosetta</i>	Pied Avocet	*	5
<i>Pluvialis squatarola</i>	Grey Plover	*	1,900
<i>Charadrius hiaticula</i>	Common Ringed Plover	*	2
<i>Numenius arquata</i>	Eurasian Curlew	*	20,000
<i>Limosa lapponica</i>	Bar-tailed Godwit	*	800
<i>Arenaria interpres</i>	Ruddy Turnstone	*	100
<i>Calidris canutus</i>	Red Knot	*	6,400
<i>Calidris alba</i>	Sanderling	2,293	800
<i>Calidris alpina</i>	Dunlin	*	18,000
<i>Calidris maritima</i>	Purple Sandpiper	389	19
<i>Tringa nebularia</i>	Common Greenshank	*	2
<i>Tringa totanus</i>	Common Redshank	*	400
<i>Larus ridibundus</i>	Black-headed Gull	*	13,000
<i>Larus canus</i>	Mew Gull	*	28,000
<i>Larus argentatus</i>	European Herring Gull	*	21,000
<i>Larus marinus</i>	Great Black-backed Gull	*	1,400

11. Germany



© Hans Glader

Preliminary results of the January 2020 count of waterbirds in coastal and inland Germany

Johannes Wahl¹, Klaus Günther²,
Jürgen Ludwig³, Nikolas Prior¹

¹ Dachverband Deutscher Avifaunisten (DDA) / Federation of German Avifaunists, An den Speichern 2, D-48157 Münster. ² Schutzstation Wattenmeer, Hafenstr. 3, D-25813 Husum. ³ Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency, State Agency for Bird Protection, Alte Hafenstr. 2, D-21729 Freiburg/Elbe.

1. INTRODUCTION

Germany is located rather northeast along the East Atlantic Flyway, resulting in huge numbers of waterbirds staging at coastal and inland sites. Both the southern Baltic coast and adjacent offshore areas as well as the Wadden Sea and the adjacent offshore areas in the North Sea are of outstanding importance for a wide variety of waterbirds, e.g. waders and sea ducks. In the northern lowlands many hundred thousand geese and swans stopover and winter, as do large numbers of dabbling and diving ducks among others. The latter are also found in their thousands e.g. on the pre-alpine lakes. Besides large numbers of staging waterbirds German wetlands including the coastal and offshore areas also harbour millions of waterbirds during winter with a tendency to increasing numbers due to the increasingly mild winters in recent years.

Counting waterbirds has a long tradition in Germany with its roots dating back as far as the 1940s. With the start of the International Waterbird Census (IWC) in 1966/67, in both German states a more systematic approach was adopted and e.g. synchronous count dates were introduced. Up to now, the IWC in January is the most important count for waterbirds with more than 2,000 count units visited in recent years. In Germany, however, many species reach their maximum numbers during autumn and/or spring migration. Hence, monthly counts were



established at many sites with the start the IWC (or even before). However, this could not be kept up everywhere and count intensity was reduced in some areas in the 1970s, mainly to November, January and March. But nowadays at many sites (again) monthly counts from September to April or October to March take place, but at more and more wetlands also year-round. Up to now, the Waterbird Census remains the backbone of the monitoring during the non-breeding season in Germany. It covers the Baltic coast and inland wetlands.

The Wadden Sea is by far the most important waterbird region in Germany. Starting in 1980/81 a new count scheme has been introduced. From the late 1980s this was expanded into a comprehensive, year-round monitoring with counts every 2 weeks (spring-tide rhythm) in most counting units under the Trilateral Monitoring and Assessment Program (TMAP), which is carried out by Denmark, Germany and The Netherlands. Besides ground-based counts this also includes aerial surveys especially targeting Common Shelduck and Common Eider. Data from TMAP also feed into the national waterbird database run by the DDA. In 1990 the Seabirds at Sea (SAS) programme was established in Germany leading to a tremendous increase in knowledge on distribution and numbers of waterbirds in the offshore areas in the North Sea and the Baltic. The SAS counts are coordinated by the Research and Technology Centre Westcoast of the University of Kiel. There is a close cooperation between the SAS team and the DDA and joint analyses are run e.g. for the article 12 reporting under the Birds Directive.

All these programmes we refer to as the „Monitoring of migratory and wintering waterbirds“. It is coordinated at national level by the DDA in close cooperation with the coordinators of TMAP and SAS as well as many ornithological associations, the Federal Nature Conservation Agency (BfN) and federal state agencies within the national bird monitoring framework (Sudfeldt et al. 2012).

2. METHODS

The surveys take place in defined counting units, covering all types of inland wetlands (but mainly lakes, reservoirs, gravel pits etc., rivers and barges) as well as coastal waters in the Wadden Sea and along the Baltic coast. Counts in these areas are mainly conducted from the ground, only few counts are done by boat or plane. In January 2020 counting mainly took place between the 8th and the 13th, but also counts around the 25th/26th were considered from the Wadden Sea in case no

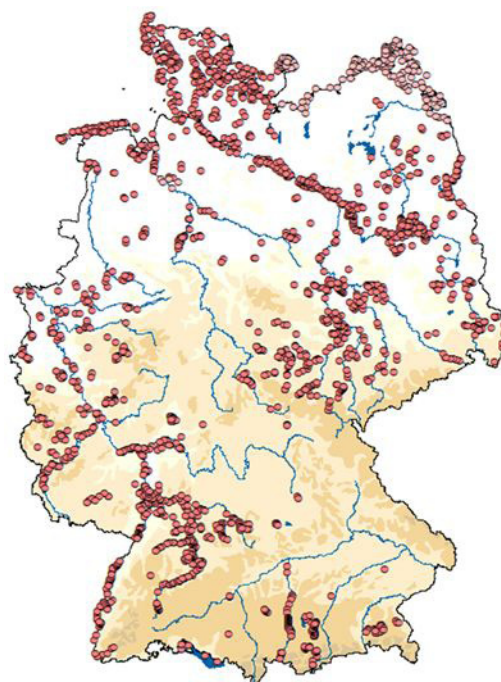


Figure 1: Count units for which data was available for January 2020 (dark red). Besides these also summary data for the Baltic coast in Mecklenburg-Western Pomerania, the island of Fehmarn and the federal state of Bremen are included in the totals given in Table 1. Count units belonging to these areas are given in light red.

count was available from around the official IWC weekend 11th/12th January.

All waterbird species covered by the African-Eurasian Waterbird Agreement are counted. Additionally observers are asked to record the "extended species list" including 19 additional wetland-related species, mainly consisting of raptors and passerines. In the Goose and Swan monitoring a limited list of waterbirds typically occurring in the open (agricultural) habitats is counted. The counts are conducted by more than 2,000 dedicated volunteers. Their annual contribution adds up to more than 100,000 hours annually. Moreover more than hundred are conducting the counts as part of their job, mainly in the Wadden Sea, but also at protected areas, such as Biosphere Reserves or National Parks.

Online data entry speeds up data availability

In October 2011, the portal ornitho.de went online. Since then more than 50 million casual records have been submitted (Oct. 2020). Starting in autumn 2016 the Waterbird Census was the first of the standardised bird monitoring programmes in Germany to go online. As of October 2020 c. 4,700 count units were online with 6,000+ count units being available at the end of the process to digitize count units. Bringing the monitoring

programmes for non-breeding waterbirds successively online is a huge step forward regarding data availability. This enables us to present some preliminary results of the International Midwinter Count from January 2020. In the years before this would have been impossible with monthly counts at many thousand count units.

3. RESULTS

The figures given in Table 1 are preliminary and incomplete with the degree of incompleteness varying between species. We provide the totals in three areas, a) Wadden Sea, b) Baltic coast, c) inland. Count data for a) and b) were largely available already, thus figures are more reliable

than figures for species wintering mainly inland (many ducks, gulls). Moreover we include two additional columns, one giving an indication in the completeness of the available count data, the second presenting total estimates for a wintering season, based on the winters 2011/12 to 2015/16, with winter being defined mainly as December to February.

4. DISCUSSION

The winter 2019/20 was the second warmest winter since recording began in 1881 according to the German Meteorological Service (dwd.de). In January the average temperature was 3.8 °C above the value for the international reference

Table 1: Preliminary results of waterbird counts in January 2020 in coastal and inland Germany (without offshore areas). Listed are only the species belonging to the East Atlantic Flyway focal species. Count totals for many species are yet incomplete, as outside the Wadden Sea and the Baltic coast mainly data submitted via the online portal ornitho.de are included. Especially for species wintering at inland sites, figures are very incomplete. Not included are any data from offshore surveys. The Availability column gives some indication on the (in)completeness of the available count data (I = c. >90% available, II = c. 50-90%; III = <50%). The last column gives an indication on the "true" number: these estimates (for 2011/12 to 2015/16; Gerlach et al. 2019) account for gaps in the count data, gaps in coverage of the counting schemes and include offshore areas. "Winter" mainly refers to the wintering period, for most species this being December to February. More on the national population estimates will be published by Wahl et al. in Die Vogelwelt. Species marked with an O are mainly wintering offshore (> 50%). Data marked with an A comes from aerial surveys.

Scientific name	English name	Wadden Sea	Baltic Coast	Inland	Total	Availability of count data from Jan. 2020	Estimated number in winter 2011/12 - 2015/16
<i>Branta bernicla</i>	Brent goose	11,658	34	174	11,866	I	10,500
<i>Branta leucopsis</i>	Barnacle goose	104,547	36,065	117,593	258,205	II	355,000
<i>Anser anser</i>	Greylag Goose	16,474	18,473	75,441	110,388	II	160,000
<i>Somateria mollissima</i>	Common EiderO	A71.011	75,842	18	146,871	III	450.000-600.000
<i>Tadorna tadorna</i>	Common Shelduck	59,987	572	3,733	64,292	I	125,000
<i>Spatula clypeata</i>	Northern Shoveler	2,405	122	911	3,438	II	5,500
<i>Mareca penelope</i>	Eurasian Wigeon	67,851	32,964	22,660	123,475	I	140,000
<i>Anas platyrhynchos</i>	Mallard	35,033	41,336	131,651	208,020	III	810,000
<i>Anas acuta</i>	Northern Pintail	9,780	563	1,293	11,636	I	15,500
<i>Anas crecca</i>	Common Teal	6,670	2,801	20,536	30,007	II	46,000
<i>Podiceps cristatus</i>	Great Crested Grebe	30	6,290	16,357	22,677	II	43,000
<i>Podiceps auritus</i>	Horned GrebeO	25	115	30	170	III	2,200
<i>Podiceps nigricollis</i>	Black-necked Grebe	0	33	931	964	I	850
<i>Platalea leucorodia</i>	Eurasian Spoonbill	1	0	0	1	I	[11-50]
<i>Ardea alba</i>	Great White Egret	149	301	3,950	4,400	III	10,000
<i>Phalacrocorax carbo</i>	Great Cormorant	167	28,084	25,376	53,627	II	73,000
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	114,521	77	3	114,601	I	195,000
<i>Recurvirostra avosetta</i>	Pied Avocet	214	0	0	214	I	3,700
<i>Pluvialis squatarola</i>	Grey Plover	8,588	48	0	8,636	I	19,000
<i>Charadrius hiaticula</i>	Common Ringed Plover	9	0	0	9	I	90
<i>Numenius arquata</i>	Eurasian Curlew	52,498	1,987	1,656	56,141	I	125,000
<i>Limosa lapponica</i>	Bar-tailed Godwit	758	3	0	761	I	9,000
<i>Arenaria interpres</i>	Ruddy Turnstone	1,190	0	0	1,190	I	2,100
<i>Calidris canutus</i>	Red Knot	7,687	168	0	7,855	I	26,000
<i>Calidris alba</i>	Sanderling	1,725	161	0	1,886	I	3,700
<i>Calidris alpina</i>	Dunlin	45,397	718	444	46,559	I	170,000
<i>Calidris maritima</i>	Purple Sandpiper	50	60	0	110	III	370
<i>Tringa totanus</i>	Common Redshank	2,210	26	130	2,366	I	4,100
<i>Larus ridibundus</i>	Black-headed Gull	3,994	9,227	29,213	42,434	III	220,000
<i>Larus canus</i>	Mew Gull	8,014	3,991	7,115	19,120	III	165,000
<i>Larus fuscus</i>	Lesser Black-backed GullO	68	1	19	88	III	4,900
<i>Larus argentatus</i>	European Herring Gull	11,168	19,300	5,988	36,456	III	155,000
<i>Larus marinus</i>	Great Black-backed GullO	733	1,244	117	2,094	III	18,500

period 1961 to 1990. Due to the shortcomings mentioned before, only results for species with a high share of available data (category I) can meaningfully be discussed. From these Brent Goose was present in rather high numbers as one would expect in such mild conditions. The same holds true for Black-necked Grebe, but also Eurasian Wigeon and Northern Pintail, taking into account that coverage is generally lower in such species and data from some inland sites are missing. Interestingly almost all waders came in with (much) lower numbers compared with the latest estimates. One would expect that in such a mild winter numbers would be rather high. Thus the low numbers suggest that the (partially long-term) decline in species such as Eurasian Oystercatcher, Grey Plover, Bar-tailed Godwit or Red Knot is continuing. The very low count totals of Common Shelduck, Eurasian Curlew and Dunlin are rather hard to explain. All three species were not in decline recently (Kleefstra et al. 2019).

From species in which gaps in data availability for 2020 are larger, the continuing increase in Barnacle Goose and Great White Egret as well as in wintering Greylag Goose are recognizable already from the count totals. In Northern Shoveler and Common Teal numbers seem rather high compared to the assumed larger gaps in data availability, but this is in line with such a non-winter as in 2019/20.

For all gull species no interpretation of count totals is possible without proper trend analyses as only parts of the true numbers are covered by the day-time or land-based counts.

Acknowledgements

Above all we thank all those participating in the waterbird counts in January 2020 and the many years before, especially the many that did this in their spare time. Without the invaluable support and continuous work of the coordinators from the federal state to the local level such counts are hardly imaginable: Johannes Baust, Rüdiger Burkhardt, Bernhard Disch, Thomas Dolich, Norman Donner, Heidemarie Eichstädt, Regina Eidner, Werner Eikhorst, Jochen Fischer, Andreas Goedecke, Thomas Heinicke, Bernd Heinze, Uwe Helbing, Veronika Huisman-Fiegen, Harald Jacoby, Christoph Kempfner, Stefan Kluth, Mona Kuhnigk, Alfons Kurz, Jochen Lehmann, Bernd Litzkow, Martin Müller, Simone Müller, Frank Radon, Falk Schieweck, Martin Schlorf, Michael Schmolz, Martin Schulze, Rico Spangenberg, Dietmar Sperling, Stefan Sudmann, Günter Süßmilch, Klaus-Henry Tauchert, Mathias Vieth, Stefan Wolff.

In the Wadden Sea area the Joint Monitoring Group of Migratory Birds in the Wadden Sea

(JMWB) consisting for Germany of Klaus Günther, Bernd Hälterlein, Peter Körber, Jürgen Ludwig, Gregor Scheiffarth and Jens Umland takes care of bird count coordination, assessment and reporting. Werner Eikhorst (Bremen), Bernd Hälterlein (aerial surveys Common Eider Wadden Sea), Jens Hartmann (Fehmarn), Mathias Vieth (Baltic coast Mecklenburg-Western Pomerania) and Georg Heine (Lake Constance) provided additional data or summaries of the January 2020 counts for their regions.

At the national level the Federal Nature Conservation Agency (BfN) and the federal state agencies support the DDA within the framework of the Administrative Agreement on bird monitoring in Germany. In the Schleswig-Holstein Wadden Sea area the Schutzstation Wattenmeer coordinates the counts on behalf of the National Park authority. In the Lower Saxony Wadden Sea National Park counts are jointly coordinated and conducted by the National Park authority and the State Agency for Bird Conservation in the Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency.

Literature

Gerlach, B., R. Dröschmeister, T. Langgemach, K. Borkenhagen, M. Busch, M. Hauswirth, T. Heinicke, J. Kamp, J. Karthäuser, C. König, N. Markones, N. Prior, S. Trautmann, J. Wahl & C. Sudfeldt (2019): *Vögel in Deutschland – Übersichten zur Bestandssituation*. DDA, BfN, LAG VSW, Münster. [in German with English summary and captions]

Kleefstra, R., M. Hornman, T. Bregnballe, J. Frikke, K. Günther, B. Hälterlein, P. Körber, J. Ludwig & G. Scheiffarth (2019): *Trends of Migratory and Wintering Waterbirds in the Wadden Sea 1987/1988 – 2016/2017*. Wadden Sea Ecosystem No. 39, Common Wadden Sea Secretariat, Joint Monitoring Group of Migratory Birds in the Wadden Sea, Wilhelmshaven, Germany.

Sudfeldt, C., R. Dröschmeister, J. Wahl, K. Berlin, T. Gottschalk, C. Grüneberg, A. Mitschke & S. Trautmann (2012): *Vogelmonitoring in Deutschland – Programme und Anwendungen*. Naturschutz und Biologische Vielfalt 119, Landwirtschaftsverlag, Münster. [in German]

12. Netherlands



© Hans Schekkerman

Results of January 2020 waterbird count in The Netherlands

Menno Hornman
Sovon Dutch Centre for Field
Ornithology Toernooiveld 1,
6525 ED Nijmegen,
The Netherlands.
menno.hornman@sovon.nl



1. INTRODUCTION

The Netherlands are a fairly small low lying country in Western Europe bordering the North Sea. Hence its name, about 26% of the country is situated below sea-level (protected by dikes and dunes). Large parts of the country are a big delta of the Rhine, Meuse, Schelde and Eems rivers. Thanks to its water rich character (almost 20%

of the area of The Netherlands consists of water), relatively mild winters and location on the East Atlantic migration route, The Netherlands is very attractive for wintering and migrating waterbirds. Waterbird counts in The Netherlands have a long tradition and are nowadays part of a national governmental ecological surveillance scheme ('Netwerk Ecologische Monitoring'). The monthly waterbird counts mainly aim to inform about trends in numbers at national scale and site level (Natura 2000 sites) and deliver data to several other (international) frameworks like the International Waterbird Count (IWC) and the Trilateral Monitoring and Assessment Program (TMAP, carried out by Denmark, Germany and The Netherlands). Furthermore, the data collected with the waterbird scheme provide essential input for the national Art 12 report to the EU. The IWC counts in the Netherlands are organised from 1967 onwards. However, locally some counts already started in 1947.

2. METHODS

The Dutch waterbird scheme (Hornman et al. 2020) has a standardized set up, with fixed (monthly) counting dates and fixed counting units. Sovon acts as national coordinator, in close collaboration with several (national as well as regional) governmental bodies and Statistics Netherlands (trend analyses and quality control).

Fieldwork is carried out by more than 1,900

volunteers and locally also professional counters (mainly ship-based or aerial surveys). The counts cover all important wetlands and goose and swan staging/wintering sites, including vast farmland areas. Waterbird and geese and swan counts are carried out monthly in September–April (with an additional goose count in May), in some areas year round as well. During IWC in January, numerous smaller waterbodies, urban parks and various canals are additionally visited, with focus on the low western part of the country, where largest concentrations of waterbirds occur. In January in total 3,500 counting units are counted covering c 24,000 km² which is approximately 59% of the country's surface. Tidal areas are counted during high tide, whereas the open waters of Lake IJsselmeer, Lake Markermeer, Wadden Sea and coastal zone of North Sea are covered with aerial surveys (latter for sea-ducks in January and November). Since 2014 seabirds are counted with aerial surveys in the entire Dutch part of the North Sea in September, November, January/February and the coastal zone also in April and June. In addition, the vast dataset and ongoing work of the sea migration counts are used for calculating trends as well.

3. RESULTS

In 1967 during the first official IWC more than 650,000 birds were counted. Hereafter total number has increased, but the coverage of the country increased also considerably. Since 2011 total number of counted waterbirds was never below 5 million (average 5.43 million). In January 2020 (rounded) 5,485,000 birds were counted. Barnacle Goose (731,000), Greater White-fronted Goose (669,000), and Wigeon (622,000) were the most numerous bird species, as was the case in most years before, although Barnacle and Greater White-fronted Goose switched rank 1 and 2. Thanks to the quick submission of counting data (thanks to online portals and apps) the result of the January 2020 count is already as good as complete.

4. DISCUSSION

Since 1975, the monthly average number of waterbirds in The Netherlands has about doubled, albeit showing some signs of decline in the past decade. This recent decline is mainly due to lower numbers in some goose and swan species, whereas several duck species still experience an ongoing increase.

Species with core wintering areas more North-

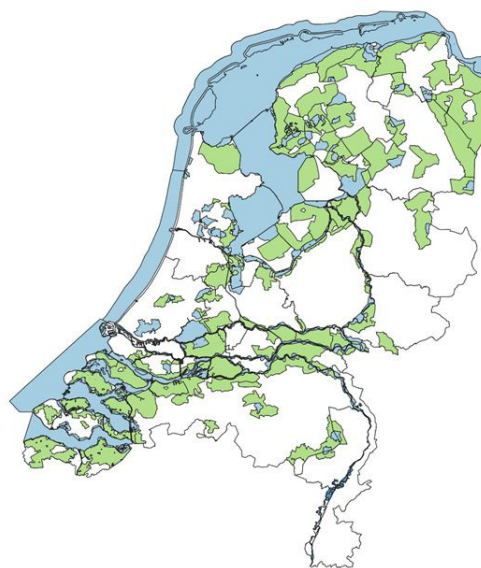


Figure 1: Main Dutch monitoring sites (blue: State Water systems and Special Protected Areas which are counted monthly from Sep–Apr or whole year round (some)) and geese and swan counting sites in agricultural areas (green). In addition many other sites are counted during the IWC in January which are not indicated on the map.

east of The Netherlands (e.g. Taiga Bean Goose, Common Goldeneye, Goosander, Smew) have more negative trends than species in which the country represents the core wintering range (e.g. Barnacle Goose, Gadwall) or species that predominantly winter Southwest of The Netherlands (Eurasian Spoonbill, Northern Shoveler, Sanderling, Pied Avocet). It is likely that the tendency for warmer winters is a major driver for these developments, but other factors (also species-specific) may play a role as well.

Regarding trends in Natura 2000 species, about 2/3 of the species occurs in numbers which meet the national goals for favourable conservation status, e.g. Great White Egret, Gadwall and Barnacle Goose. Exceptions in this group are Pink-footed Goose, Spotted Redshank, Mallard and Common Goldeneye (number lower than national goals for favourable conservation status). Within the group of 20 species, for which a recovery of numbers was aimed for at national level, most species are still (far) below these aims, e.g. Bewick's Swan, Kentish Plover and Black-necked Grebe. These developments are partly caused by international developments (e.g. changes in migration strategy in Pink-footed Goose and decline in flyway population of Bewick's Swan). At the level of individual Natura 2000 sites, trend in waterbird numbers are very heterogeneous. Online, www.sovon.nl/nl/gebieden gives a full overview of all sites, species and trends as well as links to general information about these sites.

Acknowledgements

In January 2020 more than 1,900 volunteer counters participated in the IWC census. I would like to thank them all for their time and commitment. Thanks to their enthusiastic and unremitting commitment, the regional coordinators were able to motivate many counters and recruit new ones. Without the professional counts in the Delta area, IJsselmeer and North Sea the census wouldn't be complete. The Dutch Waterbird scheme is part of the Dutch governmental Network of Ecological Monitoring (NEM) and is commissioned by Rijkswaterstaat - Central Information Services, the Ministry of Agriculture, Nature and Food Quality and the 12 Provinces. It is carried out by Sovon Dutch Centre for Field Ornithology and Statistics Netherlands.

Table 1. Counted numbers (preliminary) of selected species (East Atlantic Flyway focal species) in The Netherlands during the IWC waterbird count in January 2020. The total average population estimates in the Netherlands (including estimates for uncounted sites) in 2013-2017 are given as well (van Kleunen et al. 2020), NA is not assessed.

Scientific name	English name	Number counted 2020	Total estimate 2013-2017
<i>Branta bernicla</i>	Brent Goose	52,809	61,800
<i>Branta leucopsis</i>	Barnacle Goose	731,149	738,000
<i>Anser anser</i>	Greylag Goose	426,860	519,000
<i>Somateria mollissima</i>	Common Eider	56,945	91,600
<i>Tadorna tadorna</i>	Common Shelduck	44,170	67,200
<i>Spatula clypeata</i>	Northern Shoveler	14,802	16,200
<i>Mareca penelope</i>	Eurasian Wigeon	621,785	888,000
<i>Anas platyrhynchos</i>	Mallard	259,594	542,000
<i>Anas acuta</i>	Northern Pintail	25,768	30,400
<i>Anas crecca</i>	Common Teal	63,621	74,800
<i>Podiceps cristatus</i>	Great Crested Grebe	20,364	18,700
<i>Podiceps auritus</i>	Horned Grebe	102	100
<i>Podiceps nigricollis</i>	Black-necked Grebe	875	800
<i>Phoenicopterus roseus</i>	Greater Flamingo	10	18
<i>Platalea leucorodia</i>	Eurasian Spoonbill	151	NA
<i>Ardea alba</i>	Great White Egret	9,227	7,600
<i>Egretta garzetta</i>	Little Egret	255	NA
<i>Pelecanus onocrotalus</i>	Great White Pelican	1	0
<i>Phalacrocorax carbo</i>	Great Cormorant	32,015	38,100
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	165,071	174,000
<i>Recurvirostra avosetta</i>	Pied Avocet	4,223	2,700
<i>Pluvialis squatarola</i>	Grey Plover	30,002	26,700
<i>Charadrius hiaticula</i>	Common Ringed Plover	513	400

References

Hornman M., Hustings F., Koffijberg K., van Winden E., van Els P., Kleefstra R., Sovon Ganzen- en Zwanenwerkgroep & Soldaat L. 2020. Watervogels in Nederland in 2017/2018. Sovon rapport 2020/01, RWS-rapport BM 19.18. Sovon Vogelonderzoek Nederland, Nijmegen.

van Kleunen A., van Roomen M., van Winden E., Hornman M., Boele A., Kampichler C., Zoetebier D., Sierdsema H., van Turnhout C. 2020. Vogelrichtlijnrapportage 2013-2018 van Nederland - status en trends van soorten. Wettelijke Onderzoekstaken Natuur & Milieu, WOt-technical report 172, Wageningen.

Scientific name	English name	Number counted 2020	Total estimate 2013-2017
<i>Charadrius alexandrinus</i>	Kentish Plover	1	0
<i>Numenius phaeopus</i>	Whimbrel	4	0
<i>Numenius arquata</i>	Eurasian Curlew	147,546	172,000
<i>Limosa lapponica</i>	Bar-tailed Godwit	64,468	69,100
<i>Arenaria interpres</i>	Ruddy Turnstone	7,186	5,900
<i>Calidris canutus</i>	Red Knot	34,462	87,600
<i>Calidris alba</i>	Sanderling	10,747	15,300
<i>Calidris alpina</i>	Dunlin	199,264	248,000
<i>Calidris maritima</i>	Purple Sandpiper	166	500
<i>Calidris minuta</i>	Little Stint	4	0
<i>Actitis hypoleucos</i>	Common Sandpiper	19	NA
<i>Tringa erythropus</i>	Spotted Redshank	169	NA
<i>Tringa nebularia</i>	Common Green-shank	22	NA
<i>Tringa totanus</i>	Common Red-shank	12,724	9,900
<i>Larus ridibundus</i>	Black-headed Gull	209,003	NA
<i>Larus melanocephalus</i>	Mediterranean Gull	56	NA
<i>Larus canus</i>	Mew Gull	220,973	NA
<i>Larus fuscus</i>	Lesser Black-backed Gull	282	NA
<i>Larus argentatus</i>	European Herring Gull	106,828	133,000
<i>Larus michahellis</i>	Yellow-legged Gull	37	NA
<i>Larus marinus</i>	Great Black-backed Gull	5,762	NA
<i>Sterna hirundo</i>	Common Tern	1	NA
<i>Thalasseus sandvicensis</i>	Sandwich Tern	32	NA

13. Belgium



© Koen Devos

Coastal waterbirds in Belgium: results of the mid-January 2020 count

Koen Devos, Research Institute for Nature and Forest (INBO)
Herman Teirlinckgebouw, Havenlaan 88 bus 73, 1000 Brussels, Belgium
koen.devos@inbo.be

RESEARCH INSTITUTE
NATURE AND FOREST

1. INTRODUCTION

Coastal waterbird numbers in Belgium are rather small. The main reason is that, of all the European countries bordering the sea, Belgium has one of the shortest (65.4 km in length) and most urbanised coastlines with few suitable habitats for waterbirds. Along the coast, narrow sandy beaches prevail, with broader beaches restricted to the west coast near De Panne (c. 3 km long) and at both sides of the Zeebrugge harbour piers (c. 1 km). The tidal range amounts to between 3–5 m. Stony breakwaters – constructed to prevent marine erosion – are a characteristic feature along

the Belgian shoreline. More than half of the entire length of the coast (34 km) is bordered with buildings and boulevards. Intertidal saltmarshes and mudflats are found at two locations: the eastern bank of the Yzer estuary at Nieuwpoort and the tidal inlet of the Zwin area near the Dutch border. The tidal flats and saltmarshes along the river Yzer cover about 33 ha, beside some 25 ha of dune habitats. The Zwin nature reserve at Knokke is part of a transboundary wetland, with around 250 ha in Belgium and 25 ha in The Netherlands. Both these areas are nationally and internationally protected, with tidal habitats recently been restored and expanded by nature restoration projects. Until 10 years ago, also the port of Zeebrugge held important waterbird numbers but most of the suitable feeding areas for waders have been gradually disappearing due to the construction of new container terminals.

2. METHODS

Mid-monthly waterbird counts in Flanders – the northern region of Belgium – are carried out during the period October to March (Devos et al. 2020) and do also cover coastal habitats. Hence, they provide quite complete and reliable information about the numbers and trends of waterbirds that occur along the Belgian coast. These counts are organised by the Flemish Research Institute for Nature and Forest (INBO), while most of the fieldwork is done by skilled volunteers (with support of the NGO Natuurpunt).

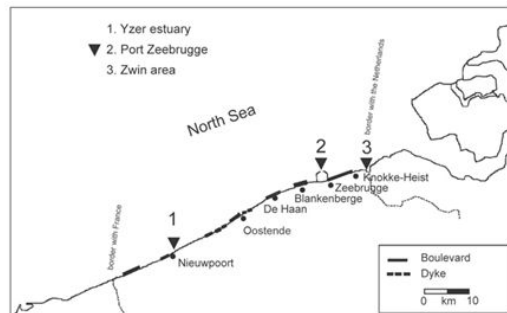


Figure 1. Map with the Belgian shoreline and indication of the main wintering areas of coastal waterbirds.

For the East Atlantic Flyway assessment 2020, all counts took place on 19/20 January and included all waterbird species, with exception of gulls. Waders along the coast were counted during high tide, when they gather on high tide roosts. Traditional roost places are well known and their coverage during the 2020 count can be regarded as complete. In order to minimise the

effects of bird movements, the majority of the roosts were counted more or less simultaneously (by 14 counters).

3. RESULTS

The results of the East Atlantic Flyway count along the Belgian coast are summarized in Table 1. The most numerous species were Eurasian Oystercatcher, Dunlin and Ruddy Turnstone. The distribution of these species is largely restricted to the Belgian coastline, so their numbers are very close to the total Belgium population number. In contrast, some wader species such as Northern Lapwing and Eurasian Curlew mainly occur at inland sites, especially on agricultural grasslands and arable fields. Their numbers in coastal areas only represent a small proportion of the Belgian population. This is also the case for cormorants, herons, grebes, geese and ducks.

Table 1: Species totals of coastal waterbirds along the Belgian coast and for the whole of Belgium (preliminary figures) during the mid-January count 2020. Numbers for Belgium don't include numbers for Wallonia, but for most species these are usually very low (except for grebes, cormorants and Mallard).

Scientific name	English name	Coast	Total Belgium
<i>Branta bernicla</i>	Brent Goose	24	27
<i>Branta leucopsis</i>	Barnacle Goose	8	12,829
<i>Somateria mollissima</i>	Common Eider	1	1
<i>Tadorna tadorna</i>	Common Shelduck	368	2,997
<i>Spatula clypeata</i>	Northern Shoveler	4	3,023
<i>Mareca penelope</i>	Eurasian Wigeon	233	30,279
<i>Anas platyrhynchos</i>	Mallard	400	33,788
<i>Anas acuta</i>	Northern Pintail	25	436
<i>Anas crecca</i>	Common Teal	23	8,980
<i>Podiceps cristatus</i>	Great Crested Grebe	27	1,658
<i>Platalea leucorodia</i>	Eurasian Spoonbill	1	13
<i>Phalacrocorax carbo</i>	Great Cormorant	78	3,702
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	1,654	1,955
<i>Recurvirostra avosetta</i>	Pied Avocet	47	262
<i>Pluvialis squatarola</i>	Grey Plover	187	187
<i>Charadrius hiaticula</i>	Common Ringed Plover	82	82
<i>Vanellus vanellus</i>	Northern Lapwing	779	33,306
<i>Numenius phaeopus</i>	Whimbrel	1	1
<i>Numenius arquata</i>	Eurasian Curlew	339	9,076
<i>Limosa limosa</i>	Black-tailed Godwit	2	2
<i>Arenaria interpres</i>	Ruddy Turnstone	1,197	1,199
<i>Calidris canutus</i>	Red Knot	7	7
<i>Calidris alba</i>	Sanderling	251	251
<i>Calidris alpina</i>	Dunlin	1,847	1,856
<i>Calidris maritima</i>	Purple Sandpiper	38	38
<i>Tringa erythropus</i>	Spotted Redshank	11	11
<i>Tringa totanus</i>	Common Redshank	302	356

4. DISCUSSION

Placed in an international context, coastal wader populations in Belgium are rather small and do not represent a large proportion of total flyway populations (< 1%). For many species, the results of the 2020 count are in line with the trends in previous years. This is especially the case for species that show long term declines as Purple Sandpiper (up to 330 in the 1970s) and Grey Plover (up to 560 in the 1990s). Numbers of other species such as Eurasian Oystercatcher and Ruddy Turnstone seem to stabilize, after a substantial increase in the second half of the 20th century. Sanderling numbers are fluctuating strongly between years and months and reached a rather low level in January 2020.

In the 20th century, habitat loss and degradation was an important factor in some local declines in wader species, as in the Zwin nature reserve where changed tidal dynamics lead to the silting up of mudflats and the main brackish lagoon. During the last 10 to 15 years however, large nature restoration and development projects (with support of European LIFE programs) have been realised in some of the major wintering areas for waterbirds along the Belgian coast. The most recent project involved the enlargement of the Zwin nature reserve by another 120 ha of tidal habitats, replacing adjacent agricultural land. During the last winters, positive effects on the number of waders have already been observed in this area. The main pressure right now for waterbirds along the Belgian coast is probably disturbance. Especially the beaches – that are used as foraging areas by several waders species – can be very crowded. Also high tide roost outside the nature reserves are very susceptible to disturbance by walkers (and dogs). But also low flying aircrafts, helicopters and paramotors are known to disturb birds regularly. On the long term, sea level rise can be a serious threat to the current mudflats and saltmarshes.

Acknowledgements

Many thanks go to the dedicated counters: Paul Lingier, Serge Allein, Geert Jonckheere, Jean Pieters, Roland François, Bart But, Wouter Faveyts, Leo Declercq, Guido Rappé, Georges De Putter, Frank De Scheemaeker and Marc De Ceuninck.

References

Devos K., T'jollyn F., Desmet P., Piesschaert F. & Brosens D. (2020). Watervogels – Wintering waterbirds in Flanders, Belgium. *ZooKeys* 915: 127-135. <https://doi.org/10.3897/zookeys.915.38265>.

14. France



© Olivier Coindet

Results of the 2020 International Waterbird Census in France

Caroline Moussy &
Gwenaël Quaintenne

LPO Ligue Pour la Protection des Oiseaux, BirdLife International France.

With the collaboration of Lucie Schmaltz who coordinated the IWC in France in 2019 and 2020.



AGIR pour la
BIODIVERSITÉ

1. INTRODUCTION

At the crossroad between the Black Sea-Mediterranean and the East Atlantic flyways, France is an attractive country for many overwintering waterbird species thanks to its number and diversity of wetlands and its network of protected sites. Most waterbirds are found along the North Sea and the Channel Sea, the Bay of Biscay, and the Mediterranean Sea, totalling 5,165 km of coastline. They frequent large estuarine bays and intertidal flats, coastal marshes, Mediterranean lagoons, linear rocky and sandy shorelines. Inland

wetlands are also of great importance, including some large wetlands areas such as the Rhine Valley, the region of Champagne and lakes and ponds of the Brenne and the Dombe areas. Each year over 2,7 million waterbirds are counted by a volunteer and professional network of birdwatchers and protected area managers that continues to grow, making the IWC one of the first citizen science programme in France.

2. METHODS

The IWC in France relies mainly on the network of some 66 local coordinators deployed at the scale of administrative Counties and Regions. They coordinate participants, organise the cover and date of the census and are in charge of reporting the data to the national coordination. Relaying the official date of the IWC in Europe and Africa (fixed to the 11th-12th January in 2020) a 7-days windows is allowed to account for local constraints such as tidal cycle or bad weather. Since 2016, the process for reporting census data goes through an online reporting module. This new system of reporting was only possible thanks to the hard work done by the local coordinators to digitalize around 10,100 counting units inside some 500 functional sites. Using this system, observers can now report their observations directly in the field using the smartphone app Naturalist. Most sites are visited on foot but boats are also used to visit islands in Brittany and some mainland lakes. Due

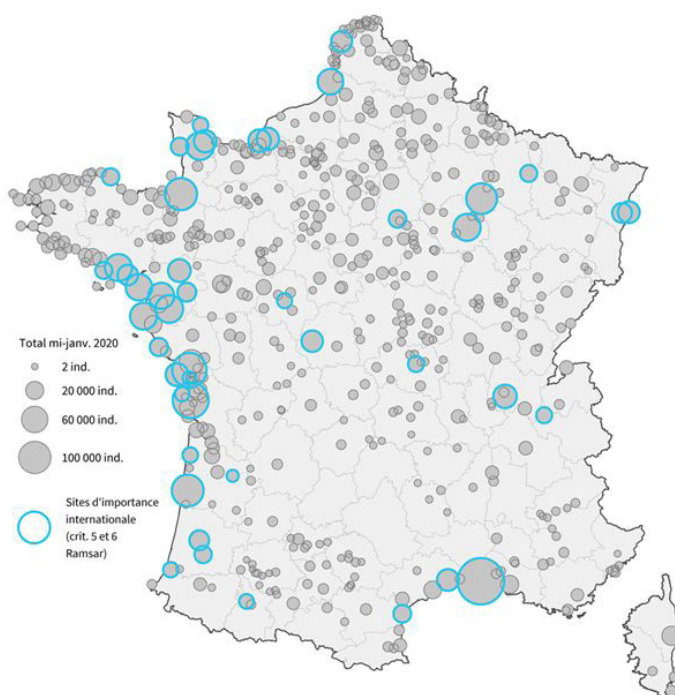


Figure 1: Cover of the 2020 IWC in France. Total number of waterbirds counted during the 2020 mid-January census in France and location of sites meeting criteria for international importance

to its extent and inherent problems of accessibility, only the Camargue is surveyed each year by plane. In 2020, 497 sites were counted (i.e. a good cover of 93%) for a total of 2,854,886 waterbirds. More than 1,500 birdwatchers - mainly volunteers but also professional from Nature Conservation NGOs, public agencies, protected areas etc. - were involved in the census.

3. RESULTS

See table below.

4. DISCUSSION

Similarly to 2018, a mild autumn and winter seems to explain again fewer numbers of Anatidae, Coot and Grebes counted this mid-January 2020 (this was especially true for diving ducks not reported there). Numbers of Brent Goose, which traditionally moves in cycles, are at the low point. Numbers of Mallards, the main contributor to the group was also low (-20% compared to last year). In contrast, and probably linked to successful breeding seasons and the mild winter, this 2020 census reached record levels of Greater Flamingo (52,284 ind.), Eurasian Spoonbill (2,102 ind.) and Great Egret (7,616 ind.).

As a whole, numbers of shorebirds were also

high. Numbers of Nearctic shorebirds, Red Knot, Sanderling and Ruddy Turnstone are back to their previous levels. Only Bar-tailed Godwit, Little Stint and Purple Sandpiper showed numbers below 10-years averages.

Regarding Gulls and Tern, numbers remains difficult to interpret because counts are not exhaustive for this group during the period of the formal IWC. According to the latest 5th French Gulls Census (winter 2017/2018), Black-headed Gull numbers (709,857 ind. reported in 2017/2018) and Herring Gull (169,193 ind.) are in continuous decline, so are Mew Gulls. In contrast we observe an increase of Sandwich Tern numbers (1,019 ind.). The top 5 sites for EAF focal species in Atlantic France are: the Réserve Naturelle de Moëze (Charente-Seudre) with 104,839 ind., the Aiguillon Bay (85,428 ind.), the Bassin d'Arcachon (76,108 ind.), the Mont-Saint-Michel Bay (69,338 ind.) and the Bourgneuf/Noirmoutier Bay (51,487 ind.).

Acknowledgements

This work would have been impossible without the participation of field ornithologists, mostly volunteers, counting birds for a large number of ornithological associations and organizations. The International Waterbird Census is funded by the Ministère de la Transition Ecologique, Direction de l'eau et de la biodiversité.

Table 1: Total numbers of the focal species of the East Atlantic Flyway assessment recorded in France in mid-January 2020. Numbers are given according to each Wetland International region (North-West Europe (Atlantic), North-West Mediterranean and Central Europe)

Scientific name	English name	French name	Atlantic	NW Med	C Eur	Total
<i>Branta bernicla</i>	Brent Goose	Bernache cravant	93,331	0	0	93,331
<i>Branta leucopsis</i>	Barnacle Goose	Bernache nonnette	88	0	0	88
<i>Anser anser</i>	Greylag Goose	Oie cendrée	12,287	2,018	1,129	15,434
<i>Somateria mollissima</i>	Common Eider	Eider à duvet	108	29	0	137
<i>Tadorna tadorna</i>	Common Shelduck	Tadorne de Belon	52,406	8,095	0	60,501
<i>Spatula clypeata</i>	Northern Shoveler	Canard souchet	29,939	11,734	9	41,682
<i>Mareca penelope</i>	Eurasian Wigeon	Canard siffleur	33,843	12,210	622	46,675
<i>Anas platyrhynchos</i>	Mallard	Canard colvert	180,685	26,007	13,505	220,197
<i>Anas acuta</i>	Northern Pintail	Canard pilet	12,461	3,493	76	16,030
<i>Anas crecca</i>	Common Teal	Sarcelle d'hiver	91,530	31,798	1,214	124,542
<i>Podiceps cristatus</i>	Great Crested Grebe	Grèbe huppé	26,107	3,978	899	30,984
<i>Podiceps auritus</i>	Horned Grebe	Grèbe esclavon	177	0	0	177
<i>Podiceps nigricollis</i>	Black-necked Grebe	Grèbe à cou noir	3,908	3,998	3	7,909
<i>Platalea leucorodia</i>	Eurasian Spoonbill	Spatule blanche	1,933	169	0	2,102
<i>Ardea alba</i>	Great White Egret	Grande Aigrette	7,616	777	257	8,650
<i>Phalacrocorax carbo</i>	Great Cormorant	Grand Cormoran	57,195	14,680	2,105	73,980
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	Huïtrier pie	43,463	0	0	43,463
<i>Recurvirostra avosetta</i>	Pied Avocet	Avocette élégante	21,980	2,509	0	24,489
<i>Pluvialis squatarola</i>	Grey Plover	Pluvier argenté	34,764	1,007	0	35,771
<i>Charadrius hiaticula</i>	Common Ringed Plover	Pluvier grand-gravelot	13,583	216	0	13,799
<i>Charadrius alexandrinus</i>	Kentish Plover	Pluvier à collier interrompu	201	480	0	681
<i>Numenius phaeopus</i>	Whimbrel	Courlis corlieu	99	0	0	99
<i>Numenius arquata</i>	Eurasian Curlew	Courlis cendré	29,390	630	1	30,021
<i>Limosa lapponica</i>	Bar-tailed Godwit	Barge rousse	7,125	1	0	7,126
<i>Arenaria interpres</i>	Ruddy Turnstone	Tournepièrre à collier	29,993	66	0	30,059
<i>Calidris canutus</i>	Red Knot	Bécasseau maubèche	48,947	4	0	48,951
<i>Calidris alba</i>	Sanderling	Bécasseau sanderling	29,612	201	0	29,813
<i>Calidris alpina</i>	Dunlin	Bécasseau variable	295,984	26,973	0	322,957
<i>Calidris maritima</i>	Purple Sandpiper	Bécasseau violet	736	0	0	736
<i>Calidris minuta</i>	Little Stint	Bécasseau minute	67	621	0	688
<i>Tringa erythropus</i>	Spotted Redshank	Chevalier arlequin	393	9	0	402
<i>Tringa nebularia</i>	Common Greenshank	Chevalier aboyeur	655	40	0	695
<i>Tringa totanus</i>	Common Redshank	Chevalier gambette	6,469	414	0	6,883
<i>Larus ridibundus</i>	Black-headed Gull	Mouette rieuse	286,613	25,133	2,830	314,576
<i>Larus melanocephalus</i>	Mediterranean Gull	Mouette mélanocéphale	8,881	1,151	1	10,033
<i>Larus canus</i>	Mew Gull	Goéland cendré	13,102	2	39	13,143
<i>Larus fuscus</i>	Lesser Black-backed Gull	Goéland brun	14,278	9	1	14,288
<i>Larus argentatus</i>	European Herring Gull	Goéland argenté	60,548	0	0	60,548
<i>Larus marinus</i>	Great Black-backed Gull	Goéland marin	11,280	0	0	11,280
<i>Thalasseus sandvicensis</i>	Sandwich Tern	Sterne caugek	1,020	581	0	1,601

15. Portugal



© José Perdigão

January water bird census results in Portugal

Vitor Encarnação,
Instituto da Conservação da Natureza e das Florestas, IP
CEMPA – Centro de Estudos de Migrações e Proteção de Aves
Av. Combatentes da Grande Guerra, 1, 2890-015 Alcochete



1. INTRODUCTION

Within Portugal the most important sites for waterbirds are estuaries and coastal lagoons. However, mainly in the southern half of the country, there are a considerable number of dams with water reservoirs which are also important. The northern half of the country is more mountainous, and although there are some reservoirs, only a few have interesting numbers, the most important being located along the coast. The censuses in Portugal are carried out since 1975, mainly by professionals, technicians and guards from the Institute for Nature Conservation and Forests, coordinated by CEMPA, the department

of this institute dedicated to the monitoring and conservation of birds. However volunteers also regularly participate in the censuses, some for more than 30 years.

2. METHODS

The counts are performed mostly from points located on the edge of the wetlands. In large estuarine wetlands, counting is also carried out from a vessel along a predefined transect and during high tide. Larger areas, such as estuaries, are geographically divided into smaller counting units that are counted separately. All the species of waterbirds are counted, namely, Grebes (*Podicipediformes*); Cormorants (*Phalacrocoracidae*); Herons, Storks, Ibis and Spoonbills (*Ciconiiformes*); Flamingos (*Phoenicopteriformes*); Ducks and Geese (*Anseriformes*); Moorhen and Coots (*Gruiformes*); Waders, and Terns, (*Charadriiformes*). Gulls have been excluded from the counts until now.

In coastal areas, the counts are carried out during spring tide and during the high tide period, avoiding hunting days. For Grebes, Ducks, Geese and Coots, monthly counts are carried out between October and March of each year. The most important areas, such as the Tagus and Sado estuaries, are counted every month, for all species. The periods for carrying out the counts are fixed and the same for all locations. Whenever possible, the number of birds is quantified by direct counting. In the case of numerous flocks or in flight, counting is performed by estimation.

The country is divided into 17 basins or sub-basins, in which 115 counting sites have been identified (Figure 1).

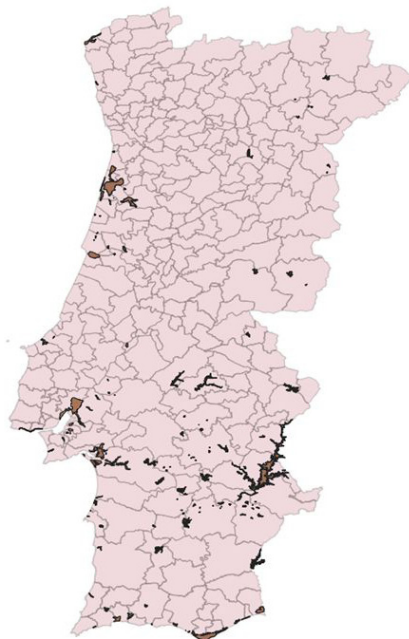


Figure 1: Counted sites in January 2019

Table 1: Counted number and estimated total per species for January could be made.

Scientific name	English name	Count	Total estimate
<i>Anser anser</i>	Greylag Goose	2,893	3,000
<i>Melanitta nigra</i>	Common Scoter	2,900	3,200
<i>Mergus serrator</i>	Red-breasted Merganser	29	45
<i>Alopochen aegyptiaca</i>	Egyptian Goose	101	160
<i>Tadorna tadorna</i>	Common Shelduck	1,129	1,200
<i>Tadorna ferruginea</i>	Ruddy Shelduck	1	5
<i>Netta rufina</i>	Red-crested Pochard	245	350
<i>Aythya ferina</i>	Common Pochard	607	650
<i>Aythya nyroca</i>	Ferruginous Duck	76	80
<i>Aythya fuligula</i>	Tufted Duck	744	800
<i>Spatula querquedula</i>	Garganey	1	5
<i>Spatula clypeata</i>	Northern Shoveler	31,702	34,000
<i>Mareca strepera</i>	Gadwall	1,922	2,200
<i>Mareca penelope</i>	Eurasian Wigeon	5,258	6,500
<i>Anas platyrhynchos</i>	Mallard	11,401	15,000
<i>Anas acuta</i>	Northern Pintail	46,274	48,000
<i>Anas crecca</i>	Common Teal	16,866	20,000
<i>Tachybaptus ruficollis</i>	Little Grebe	808	850
<i>Podiceps cristatus</i>	Great Crested Grebe	417	500
<i>Podiceps nigricollis</i>	Black-necked Grebe	124	150
<i>Phoenicopterus roseus</i>	Greater Flamingo	7,887	8,200
<i>Porphyrio porphyrio</i>	Purple Swamphen	30	120
<i>Gallinula chloropus</i>	Common Moorhen	217	?
<i>Fulica cristata</i>	Red-knobbed Coot	2	2
<i>Fulica atra</i>	Common Coot	7,539	80,000
<i>Ciconia nigra</i>	Black Stork	35	50
<i>Ciconia ciconia</i>	White Stork	558	600
<i>Platalea leucorodia</i>	Eurasian Spoonbill	2,330	2,500
<i>Plegadis falcinellus</i>	Glossy Ibis	30,597	60,000
<i>Ardeola rallioides</i>	Squacco Heron	3	8
<i>Bubulcus ibis</i>	Cattle Egret	485	?
<i>Ardea cinerea</i>	Grey Heron	1,492	1,600
<i>Ardea alba</i>	Great White Egret	186	230
<i>Egretta garzetta</i>	Little Egret	1,161	1,300

4. DISCUSSION

The main threats or pressures on waterbird populations in Portugal are the disturbance by human activities linked to fishing and sport, as well as the destruction of habitats. Specifically in some estuaries, the transformation of salt complexes into intensive fish farms, together with the increase in sea level, is causing the absence of places of refuge and intertidal rest for a very wide range of waders.

Acknowledgment

A first thanks to the 15 CEMPA's volunteer, for their efforts and collaboration in the continuity of great quality that they have been giving to this project, some of them for more than two decades. To the technicians and wardens of the ICNF of the different protected areas, who participate in this project, for the excellent and profound work they have been doing in accompanying and monitoring the areas for which they are responsible.

te

Scientific name	English name	Count	Total estimate
<i>Phalacrocorax carbo</i>	Great Cormorant	6,192	7,000
<i>Burhinus oedicnemus</i>	Eurasian Thick-knee	17	90
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	959	1,150
<i>Recurvirostra avosetta</i>	Pied Avocet	6,125	6,300
<i>Himantopus himantopus</i>	Black-winged Stilt	1,245	1,700
<i>Pluvialis squatarola</i>	Grey Plover	7,017	6,500
<i>Pluvialis apricaria</i>	Eurasian Golden Plover	245	?
<i>Charadrius hiaticula</i>	Common Ringed Plover	13,594	15,000
<i>Charadrius alexandrinus</i>	Kentish Plover	1,836	2,000
<i>Vanellus vanellus</i>	Northern Lapwing	8,593	?
<i>Numenius phaeopus</i>	Whimbrel	202	250
<i>Numenius arquata</i>	Eurasian Curlew	479	500
<i>Limosa lapponica</i>	Bar-tailed Godwit	2,273	3,000
<i>Limosa limosa</i>	Black-tailed Godwit	35,837	40,000
<i>Arenaria interpres</i>	Ruddy Turnstone	423	500
<i>Calidris canutus</i>	Red Knot	63	250
<i>Calidris pugnax</i>	Ruff	95	150
<i>Calidris ferruginea</i>	Curlew Sandpiper	10	100
<i>Calidris alba</i>	Sanderling	1,677	1,900
<i>Calidris alpina</i>	Dunlin	68,177	80,000
<i>Calidris minuta</i>	Little Stint	258	400
<i>Gallinago gallinago</i>	Common Snipe	228	?
<i>Actitis hypoleucos</i>	Common Sandpiper	308	350
<i>Tringa ochropus</i>	Green Sandpiper	37	50
<i>Tringa erythropus</i>	Spotted Redshank	13	25
<i>Tringa nebularia</i>	Common Greenshank	393	400
<i>Tringa totanus</i>	Common Redshank	3,117	3,500
<i>Hydroprogne caspia</i>	Caspian Tern	46	50
<i>Sterna hirundo</i>	Common Tern	19	30
<i>Thalasseus sandvicensis</i>	Sandwich Tern	352	400
<i>Pandion haliaetus</i>	Osprey	40	55
<i>Circus aeruginosus</i>	Western Marsh-harrier	90	110

16. Morocco



© Mohamed Dakki

Results of January count 2020 of waterbirds in Mo- rocco

Mohamed Dakki^{1,2}, Asmaâ Ouas-
sou^{1,2}, Rhimou El Hamoumi²,
Mohammed-Aziz El Agbani^{1,2}
and Abdeljebbar Qninba^{1,2}

¹ Scientific Institute, Mohamed
V University in Rabat, Morocco

² GREPOM/BirdLife Morocco,
Avenue Ibn Batouta, Rabat, Mo-
rocco



1. INTRODUCTION

Due to its location straddling the Mediterranean and Saharan biomes, Morocco has two maritime fronts, Mediterranean to the north and Atlantic to the west, giving it 3,500 km of coastal wetlands. These are enriched by a large number of inland swamps, lakes, sebkhas and gueltas occupying coastal plains, mountains and Saharan plateaus.

As this country is at the crossroads of several bird migration routes between Europe and tropical Africa, its wetlands provide key wintering stops for millions of birds, of which nearly one million are believed to winter in the country. In Morocco, the International Waterbird Census is organized by the Scientific Institute since 1983, and this chapter provides an overview of the main results. In its first phase, it was focused on ducks and coots, but starting in 1991, it was extended to all waterbird species and to all the regions. This improvement is due to a large training program of national observers and their organization in the NGO and BirdLife partner GREPOM. Since 2013, the IWC in Morocco is organized in the regional context of the Mediterranean Waterbirds (MWB) network, coordinated and stimulated by the Tour du Valat, in France. Actually, the IWC in Morocco is at its top performance, both in exhaustiveness and rapidity in data gathering and analyses. Through this short note, we provide basic information on the situation and evolution of IWC in Morocco. The 2020 results are briefly presented to show both the composition of the wintering communities and the importance of Morocco in the East Atlantic context.

2. METHODS

The only monitoring technique used since 1983 is the direct count. For each site (Figure 1), we have chosen the best places and itineraries to ensure

an optimal cover of the whole bird habitats. For most of the sites, the counts are made from terrestrial points, overlooking the wetland, but additionally we use boats in some large lagoons and bays. Most of the counts are organized in January, as much as possible between the 10th and 20th; but considering the wideness of the country and the low number of observers, we extended the monitoring period to the whole month, and in some rare cases, we exceptionally accept few counts from late December or early February. The counts are made by individuals, but sometimes by small teams of 2-4 persons, mainly for covering large sites. The number of observers involved in the counts vary generally around 20-30 people, depending on the availability of human and logistical resources, but it goes lesser than 10 in 2000 and 2012, obliging the Wetland team of the Scientific Institute to deploy a great effort to cover the best wetlands in the country. However, the organization of volunteers into the GREPOM NGO, created in 1993, and the establishment of the MWB regional coordination, have provided, since 2013, substantial logistical help that allowed to increasingly involve more GREPOM observers, which number reached 68 in 2020.

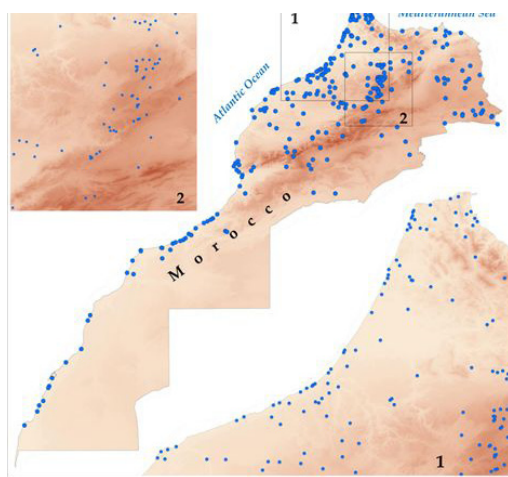


Figure1: IWC wetland network in Morocco.

3. RESULTS

A total of 112 species was recorded, cumulating 456,048 individuals, which number is very close to the average number calculated for the last five years (453,346 ind.). About 94% of this number belongs to 45 species, represented with more than 1,000 individuals, whereas 43 species cumulated less than 100 individuals (table 1). We underline that 50% of the total counts belong to seven species only: *Larus fuscus*, *Calidris alpina*, *Calidris canutus* and *Recurvirostra avo-setta*, mainly concentrated in coastal wetlands,

and *Fulica atra*, *Anas platyrhynchos* and *Anas crecca*, which are both in coastal lagoons and inland lakes, marshes and reservoirs. Even if we focused on coastal birds, the sea duck *Melanitta nigra* is recorded with a medium number. The vulnerable species are in relatively low numbers, mainly *Aythya fuligula* (442 ind.), which number is continuously decreasing in favor of *Aythya nyroca* (1,506 ind.), and *Marmaronetta angustirostris* (727 ind.), represented by less than 25% of its population in Morocco.

4. DISCUSSION

During early years of the monitoring, the number of visited wetlands exceptionally exceeded 70 sites and the number of counted birds, often limited to ducks and coots, rarely reached 180,000 (Figure 2). Through an ambitious program, implemented since 1991, we enlarged counts to the whole country and extended the census to all waterbird groups. The total counts frequently exceeded the threshold of 400,000 waterbirds and the national network of IWC wetlands reached 280 sites. However, we annually cover only 60 to 100 wetlands, mainly depending on autumn and winter weather and on the availability of logistical resources.

These 2020 counts were very exceptional, both by the high numbers of observers and visited wetlands, which reached respectively 68 and 108. More than 95% of the counts were held in January, between the 2th and 29th, with 60% between the 10th and 20th; but we accepted four counts made in late December 2019 and early February 2020.

Pressures and threats

In several wetlands, natural habitats are continuously losing in area, both under human pressures and droughts. Artificial reservoirs are increasing in number and attract mainly ducks and coots, while some polluted inland wetlands (as Wad As-Saqia Al Hamra in the South and Merja Fouwarate in the North) are growing with the improvement of their hydrology. During our visits, we frequently observe poaching, heavy disturbances to birds, and an increasing number of stray dogs, which represent a real threat for resident species.

Acknowledgements

We would like to thank all the observers who participated in this census, in particular the GREPOM volunteers and the engineers and technicians of the Department of Water and Forestry, as well as the Tour du Valat and VBN (BirdLife Netherlands), who provided the coordination of the IWCs in Morocco with appreciable logistical assistance.

Table 1: Total numbers of the waterbird species reported in the 2020 January count.

Scientific name	English name	French name	Total
<i>Oxyura leucocephala</i>	White-headed Duck	Érismature à tête blanche	728
<i>Anser anser</i>	Greylag Goose	Oie cendrée	47
<i>Anser albifrons</i>	Greater White-fronted Goose	Oie rieuse	68
<i>Melanitta nigra</i>	Common Scoter	Macreuse noire	8,340
<i>Tadorna tadorna</i>	Common Shelduck	Tadorne de Belon	11,920
<i>Tadorna feruginea</i>	Ruddy Shelduck	Tadorne casarca	1,926
<i>Marmaronetta angustirostris</i>	Marbled Teal	Marmaronette marbrée	727
<i>Netta rufina</i>	Red-crested Pochard	Nette rousse	2,469
<i>Aythya ferina</i>	Common Pochard	Fuligule milouin	8,322
<i>Aythya nyroca</i>	Ferruginous Duck	Fuligule nyroca	1,506
<i>Aythya fuligula</i>	Tufted Duck	Fuligule morillon	442
<i>Spatula querquedula</i>	Garganey	Sarcelle d'été	1
<i>Spatula clypeata</i>	Northern Shoveler	Canard souchet	17,877
<i>Mareca strepera</i>	Gadwall	Canard chipeau	938
<i>Mareca penelope</i>	Eurasian Wigeon	Canard siffleur	930
<i>Anas platyrhynchos</i>	Mallard	Canard colvert	23,933
<i>Anas acuta</i>	Northern Pintail	Canard pilet	6,221
<i>Anas crecca</i>	Common Teal	Sarcelle d'hiver	20,737
<i>Tachybaptus ruficollis</i>	Little Grebe	Grèbe castagneux	4,606
<i>Podiceps grisegena</i>	Red-necked Grebe	Grèbe jougris	4
<i>Podiceps cristatus</i>	Great Crested Grebe	Grèbe huppé	1,776
<i>Podiceps nigricollis</i>	Black-necked Grebe	Grèbe à cou noir	909
<i>Phoenicopterus roseus</i>	Greater Flamingo	Flamant rose	5,091
<i>Rallus aquaticus</i>	Western Water Rail	Râle d'eau	15
<i>Porphyrio porphyrio</i>	Purple Swamphen	Talève sultane	131
<i>Gallinula chloropus</i>	Common Moorhen	Gallinule poule-d'eau	1,918
<i>Fulica cristata</i>	Red-knobbed Coot	Foulque à crête	6,117
<i>Fulica atra</i>	Common Coot	Foulque macroule	41,543
<i>Grus grus</i>	Common Crane	Grue cendrée	1,161
<i>Ciconia nigra</i>	Black Stork	Cigogne noire	2
<i>Ciconia ciconia</i>	White Stork	Cigogne blanche	3,203
<i>Platalea leucorodia</i>	Eurasian Spoon-bill	Spatule blanche	884
<i>Plegadis falcinellus</i>	Glossy Ibis	Ibis falcinelle	1,986
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	Bihoreau gris	439
<i>Ardeola ralloides</i>	Squacco Heron	Crabier chevelu	115
<i>Bubulcus ibis</i>	Cattle Egret	Héron garde-boeufs	7,991
<i>Ardea cinerea</i>	Grey Heron	Héron cendré	1,400
<i>Ardea alba</i>	Great White Egret	Grande Aigrette	62
<i>Egretta garzetta</i>	Little Egret	Aigrette garzette	1,524
<i>Phalacrocorax carbo</i>	Great Cormorant	Grand Cormoran	11,889
<i>Burhinus oedipnemus</i>	Eurasian Thick-knee	Oedicnème criard	127
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	Huitrier pie	1,483
<i>Recurvirostra avosetta</i>	Pied Avocet	Avocette élégante	22,571
<i>Himantopus himantopus</i>	Black-winged Stilt	Échasse blanche	2,535
<i>Pluvialis squatarola</i>	Grey Plover	Pluvier argenté	5,774
<i>Pluvialis apricaria</i>	Eurasian Golden Plover	Pluvier doré	3,431
<i>Charadrius hiaticula</i>	Common Ringed Plover	Pluvier grand-gravelot	12,140

Scientific name	English name	French name	Total
<i>Charadrius dubius</i>	Little Ringed Plover	Pluvier petit-gravelot	347
<i>Charadrius alexandrinus</i>	Kentish Plover	Pluvier à collier interrompu	5,569
<i>Vanellus vanellus</i>	Northern Lapwing	Vanneau huppé	2,242
<i>Numenius phaeopus</i>	Whimbrel	Courlis corlieu	1,030
<i>Numenius arquata</i>	Eurasian Curlew	Courlis cendré	484
<i>Limosa lapponica</i>	Bar-tailed Godwit	Barge rousse	7,529
<i>Limosa limosa</i>	Black-tailed Godwit	Barge à queue noire	586
<i>Arenaria interpres</i>	Ruddy Turnstone	Tournepieuvre à collier	558
<i>Calidris canutus</i>	Red Knot	Bécasseau maubèche	23,098
<i>Calidris pugnax</i>	Ruff	Combattant varié	543
<i>Calidris ferruginea</i>	Curlew Sandpiper	Bécasseau cocorli	97
<i>Calidris alba</i>	Sanderling	Bécasseau sanderling	17,939
<i>Calidris alpina</i>	Dunlin	Bécasseau variable	42,473
<i>Calidris minuta</i>	Little Stint	Bécasseau minute	7,219
<i>Gallinago gallinago</i>	Common Snipe	Bécassine des marais	403
<i>Lymnocyptes minimus</i>	Jack Snipe	Bécassine sourde	10
<i>Actitis hypoleucos</i>	Common Sandpiper	Chevalier guignette	220
<i>Tringa ochropus</i>	Green Sandpiper	Chevalier cul-blanc	123
<i>Tringa erythropus</i>	Spotted Redshank	Chevalier arlequin	16
<i>Tringa nebularia</i>	Common Green-shank	Chevalier aboyeur	2,368
<i>Tringa totanus</i>	Common Redshank	Chevalier gambette	3,924
<i>Tringa glareola</i>	Wood Sandpiper	Chevalier sylvain	65
<i>Tringa stagnatilis</i>	Marsh Sandpiper	Chevalier stagnatile	1
<i>Larus genei</i>	Slender-billed Gull	Goéland railleur	3,022
<i>Larus ridibundus</i>	Black-headed Gull	Mouette rieuse	11,207
<i>Larus melanocephalus</i>	Mediterranean Gull	Mouette mélanocéphale	207
<i>Larus audouinii</i>	Audouin's Gull	Goéland d'Audouin	8,380
<i>Larus fuscus</i>	Lesser Black-backed Gull	Goéland brun	53,283
<i>Larus argentatus</i>	European Herring Gull	Goéland argenté	4
<i>Larus michahellis</i>	Yellow-legged Gull	Goéland leucopnée	13,910
<i>Larus hyperboreus</i>	Glaucous Gull	Goéland bourgmestre	1
<i>Larus marinus</i>	Great Black-backed Gull	Goéland marin	9
<i>Sternula albifrons</i>	Little Tern	Sterne naine	2
<i>Gelochelidon nilotica</i>	Common Gull-billed Tern	Sterne hansel	13
<i>Hydroprogne caspia</i>	Caspian Tern	Sterne caspienne	354
<i>Chlidonias hybrida</i>	Whiskered Tern	Guifette moustac	46
<i>Chlidonias niger</i>	Black Tern	Guifette noire	4
<i>Thalasseus bengalensis</i>	Lesser Crested Tern	Sterne voyageuse	1
<i>Thalasseus sandvicensis</i>	Sandwich Tern	Sterne caugek	219
<i>Pandion haliaetus</i>	Osprey	Balbuzard pêcheur	84
<i>Circus aeruginosus</i>	Western Marsh-harrier	Busard des roseaux	255
<i>Alcedo atthis</i>	Common Kingfisher	Martin-pêcheur d'Europe	46

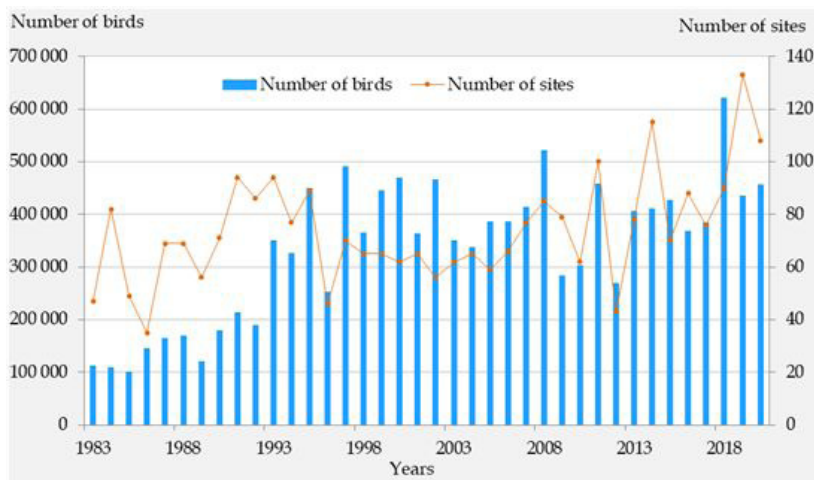


Figure 2: Evolution of the yearly counted numbers of sites and birds, between 1983 and 2020.

ANNEX

List of participants in the January counts 2020
 Aghzaoui M., Ait Baamrane A., Amezian M., Amrij H., Aourir M., Azaouaghe S., Benhamza A., Bentayaa I., Bouamama M., Boumaaza M., Bourouah B., Caballero A., Chahir A., Cherkaoui I., Dakki M., de Lope M.J., Douini I., El Abbassi S., El Allouli N., El Aouki A., El Aouki A., El Bouzidi H., El Haoua M.K., El Khamlichi R., El Mouden E., Elaji A., Essabbani A., Esshasah K., Fahmi A., Fernández M.J., Goutou Y., Hammouradia H., Hassani H., Jabar I., Kimdil L., Laarbi Jebari M., Lahrouz S., Lieron V., El Agbani M.A., Maire B., Mansouri A., Mansouri I., Mounir M., Nahli A., Noaman M., Notario J., Onrubia A., Oudghiri A.K., Oulaarif R., Oulahrir B.Y., Ousaaid D., Qninba A., Radi M., Rguibi O., Rihane A., Squalli W., Tamraoui Y., Zidane H., Zinessabah D.

17. Mauritania



© Lars Soerink

Parc National du Banc d'Arguin (PNBA)

Dénombrement des oiseaux d'eau au Parc National du Banc d'Arguin en Janvier 2020, MAURITANIE

Amadou KIDE, Parc National du
Banc d'Arguin, Premier Minis-
tère, Secrétariat General du
Gouvernement, Mauritanie



1. INTRODUCTION

Créé en 1976 par le Gouvernement Mauritanien par décret présidentiel N° 76-147 du 24 Juin 1976, le Parc National du Banc d'Arguin (PNBA) est la plus grande Aire Protégée en Afrique de l'Ouest avec une superficie de 12 000 km² dont 6 300 km² en zone maritime et 5 700 km² en zone terrestre.

Il représente le tiers du linéaire côtier du pays et occupe la moitié orientale du Golfe d'Arguin. La position du PNBA de carrefour biogéographique lui confère un caractère exceptionnel qui lui a valu d'être successivement classé site Ramsar en 1982, puis Patrimoine mondial de l'Humanité par l'Unesco en 1989 et Don à la terre en 2001 par WWF. Le Parc National du Banc d'Arguin est un site du patrimoine mondial qui se compose de plus d'une quinzaine d'îles et îlots, des baies, des lagunes qui abritent un nombre important d'oiseaux d'eau. L'importance de sa biodiversité notamment l'avifaune qui est l'une des valeurs de son classement comme label de l'UNESCO, le PNBA accueille aussi des espèces afro-tropical, l'objectif de ce comptage est de connaître chaque mois de janvier l'état de conservation des oiseaux migrateurs qui hivernent dans le site en quittant la Russie avec un court séjour en Europe (Europe de l'est, Angleterre, Mer de Wadden, etc.).

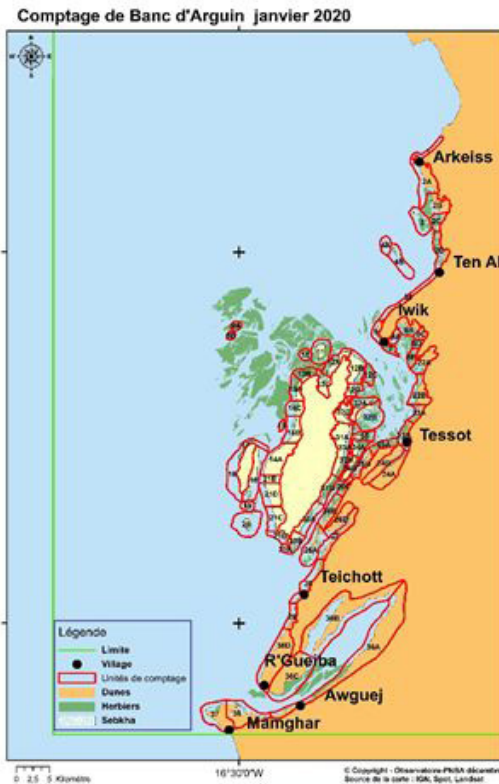
Le Parc National du Banc d'Arguin joue un rôle important en Afrique de l'Ouest et aussi au niveau international, il y a des indicateurs qui nous montrent que les limicoles sont en baisse depuis 1990, raison pour laquelle d'effectuer un comptage global et complet du site PNBA en janvier 2020.

Ce comptage a pour objectif :

- D'évaluer la taille et la tendance des oiseaux d'eau du PNBA par rapport aux autres années correspondantes aux comptages exhaustifs qui se déroulent chaque trois ans.

- De connaître l'évolution de la taille de la population des limicoles, les autres espèces (Spatule blanche, Héron cendré, Cormorans, Sternes, Pélican blanc, Flamant rose, etc...).

Cette année le dénombrement est particulier c'est un comptage global et complet, 73 unités de comptage sont visitées dans le parc (voir carte 1 et 2), le comptage s'est déroulé du 04 au 16 janvier 2020.



2. METHODOLOGIE DU TRAVAIL

Nous avons choisi la période des grandes marées, qui sont propices au comptage. Pour les dénombrements, la plupart des sites complexes ou de grandes dimensions sont divisés en sous-sites qui constituent des unités de comptage séparées (Carte 1 et 2). Le comptage des sous-sites soit étroitement coordonné et simultané, deux à trois observateurs au moins une personne expérimentée à la tête de chaque groupe pour chaque sous-site.

Les équipes de comptage ont profité de ces instants de forte concentration en haute marée pour effectuer les identifications et comptages des différents groupes d'oiseaux hivernants et sédentaires. Les oiseaux restent sur les îles au minimum quatre heures. C'est dans cet intervalle de temps que les équipes procèdent à l'identification des espèces et le comptage des différents groupes. Il a été constaté qu'en la période de grandes marées (au-delà de 1,42m) au Banc d'Arguin toutes les vasières sont submergées.

Déroulement du comptage

Ce comptage a mobilisé 46 personnes qui sont composés de : une équipe du PNBA (23), PND (2), DAPL (1), les ONG nationales Nature Mauritanie (2), AMISO (1), NAFORE (1), deux ornithologues étrangers (un Sénégalais et un Tunisien), une équipe du WSFI (7), des éco-guides de la population locale (7).

Un comité d'organisation et de logistique dont la mission est de veuille au bon déroulement du comptage, qui est constitué par l'équipe du PNBA, un ingénieur en conception de la base de données du dénombrement qui est assisté par un agent de saisie, pour plus de détail voir en Annexe la liste des participants.

3. RESULTAT

Les résultats obtenus durant les 9 journées du comptage se répartissent comme suit : au total 1707178 individus dont 1605594 limicoles, 23690 laridés, 77395 Echassiers, 168 rapaces et 331 autres pour ces 5 grands groupes (Tableau 1).

La diversité spécifique est de 59, on observe des nouvelles espèces comme : Spatule d'Afrique (*Platalea alba*), Bécasseau falcinelle (*Limicola falcinellus*), Chevalier cul-blanc (*Tringa ochropus*) et Chevalier sylvain (*Tringa glareola*).

	Equipe / Logistique	Divers
Jour 1	Participants à Iwik et à Teichott. Nouakchott à 16h00 pour arriver à Chami à 19h00	Installation des participants, coordination des équipes
Jour 2	9 unités de comptage (22A, 23B, 24B, 24A, 26C, 25B, 22B, 25A, 23A).	Réunion de présentation de la méthodologie de comptage et stratégies à adopter. Mise à disposition de l'outil LocusMap.
Jour 3	Trois véhicules sont mobilisés pour les 9 unités de comptages. Départ des équipes à 07h05mn. Retour à la base de vie d'Iwik à 13h30mn.	Réunion des responsables pour la répartition des tâches et des équipes. Restitution des résultats.
Jour 4	8 équipes de comptage composées de 28 personnes (8D, 8C, 8E, 7, 8B, 5, 8A, 6). Une embarcation est mobilisée pour le déplacement à l'unité 7 (Zira) et les autres équipes sont réparties dans 3 véhicules. Départ à 08h00 afin d'arriver à temps avant la marée de 09h40mn. Retour à la base d'Iwik à 12h00.	Réunion de compte rendu de la journée et formation des équipes du lendemain
Jour 5	8 équipes de 19 personnes 1, 2D, 3, 4B, 4A, 2A, 2C, 39. Les équipes (4A, 4B et 3) utilisent la grande embarcation et les autres équipes utilisent les 3 véhicules du PNBA. Départ à 08h30mn avant la marée de 10h01. Retour à la base d'Iwik à 15h00mn	Restitution des résultats de la journée et reconstitution des équipes à nouveau.
Jour 6	12 équipes de 13 personnes (32B, 32C, 35, 34B, 34A, 33A, 33B, 32A, 12C, 31A, 12D, 12B) ont mobilisé 2 embarcations pour le déplacement vers les îles. Départ à la plage d'Iwik à 09h45mn pour arriver dans les îles avant la haute marée de 11h48mn. La première embarcation est de retour à 17h00 et la seconde à 18h00.	Restitution des résultats de la journée et reconstitution des équipes à nouveau.
Jour 7	7 équipes de 16 personnes (41, 42, 14C, 15, 14B, 40 ; 14A) sont réparties dans 3 embarcations et 2 véhicules. Départ à 07h00 des deux véhicules vers Agadir, arrivée à 08h27mn. Deux équipes ont pris l'embarcation de la traversée vers l'île d'Agadir, arrivée à 11h00 en attente de la marée. Départ de l'embarcation à 11h45mn pour aller dans les îles (Arguin, Ardent et Marguerit). Fin du comptage dans les îles à 13h45, retour à Iwik pour arriver à 18h35mn.	Restitution des résultats de la journée et reconstitution des équipes à nouveau.
Jour 8	9 équipes de 15 personnes (9A, 9B, 10, 11, 12A, 12E, 13A, 13B, 13C) dans deux embarcations. Départ à 09h30mn vers les îles.	Restitution des résultats de la journée.
Jour 9	Départ à 18h00 d'Iwik vers Teichott.	
Jour 10	11 équipes de 14 personnes (19, 20, 21A, 21B, 21C, 21D, 21E, 30A, 30B, 31B, 36D). Deux embarcations sont mobilisées pour le déplacement vers les îles Kiji et Tidra, deux véhicules pour le comptage de la côte Baie de Saint Jean nord.	Formation des groupes qui vont faire le comptage de la journée. L'unité de comptage 36C n'est pas visitée par des contraintes liées à l'accès à la zone, aussi l'équipe chargée du comptage à l'île Kiji a eu une panne d'un moteur de l'embarcation.
Jour 11	6 groupes composés de 11 participants (26A, 26B, 26D, 27, 28, 29). Trois véhicules sont mobilisés. 1 véhicule est parti à 11h20mn et deux autres véhicules à 11h30mn. Deux autres équipes partent respectivement à 18h05 et à 18h30mn à Mamghar. Arrivée des équipes à 19h30 et installation dans la nouvelle base de vie de Mamghar.	Restitution des résultats de la journée précédente (jour 10) et préparation de la journée (jour 11).
Jour 12	3 groupes de 11 personnes (38, 36A, 37). Deux véhicules sont mobilisés. Départ vers 10h51mn, la marée haute est à 11h53mn. Fin du comptage et retour à Nouakchott en longeant la plage.	Restitution des résultats de la journée précédente (jour 11) et préparation de la journée (jour 12).
Jour 13	Réunion de toute l'équipe de comptage à Nouakchott. L'ensemble des fiches de comptage sont saisies dans la base de données oracle 11g. La restitution a été faite par Marc van Roomen en présence du staff du PNBA.	

4. DISCUSSION

Au Baie d'Arguin les activités humaines (agriculture, zones de bâties, transport, exploitations minières, tourisme, exploitation de la faune et de la flore) ont peu d'impact sur le site. Cependant, la pêche occupe une place importante dans ce

site et elle exerce une pression modérée sur les oiseaux. Par contre, le changement climatique a des effets étendus sur le site ; mais la pression est modérée sur les oiseaux. Malgré les mesures de conservations, leur efficacité n'est pas évaluée. Au Banc d'Arguin l'impact des activités humaines est presque pareil à celui du Baie d'Arguin. Le change-

Tableau 1 : Récapitulatif du dénombrement du janvier 2020 en PNBA en Mauritanie

Scientific name	French name	Count 2020
<i>Phoenicopterus roseus</i>	Flamant rose	32,816
<i>Phoeniconaias minor</i>	Flamant nain	1,119
<i>Platalea alba</i>	Spatule d'Afrique	4
<i>Platalea leucorodia</i>	Spatule blanche	7,794
<i>Ardea cinerea</i>	Héron cendré	3,248
<i>Egretta garzetta</i>	Aigrette garzette	2,136
<i>Egretta gularis</i>	Aigrette à gorge blanche	1,951
<i>Pelecanus onocrotalus</i>	Pélican blanc	4,010
<i>Microcarbo africanus</i>	Cormoran africain	9,003
<i>Phalacrocorax carbo</i>	Grand Cormoran	15,326
<i>Haematopus ostralegus</i>	Huîtrier pie	9,162
<i>Pluvialis squatarola</i>	Pluvier argenté	21,009
<i>Charadrius hiaticula</i>	Pluvier grand-gravelot	66,069
<i>Charadrius alexandrinus</i>	Pluvier à collier interrompu	7,670
<i>Numenius phaeopus</i>	Courlis corlieu	16,770
<i>Numenius arquata</i>	Courlis cendré	4,246
<i>Limosa lapponica</i>	Barge rousse	209,090
<i>Arenaria interpres</i>	Tournepiere à collier	13,667
<i>Calidris canutus</i>	Bécasseau maubèche	130,369
<i>Calidris ferruginea</i>	Bécasseau cocorli	33,072
<i>Calidris alba</i>	Bécasseau sanderling	38,910
<i>Calidris alpina</i>	Bécasseau variable	969,098

Scientific name	French name	Count 2020
<i>Calidris minuta</i>	Bécasseau minute	11,006
<i>Actitis hypoleucos</i>	Chevalier guignette	15
<i>Tringa ochropus</i>	Chevalier cul-blanc	1
<i>Tringa nebularia</i>	Chevalier aboyeur	2,498
<i>Tringa totanus</i>	Chevalier gambette	73,522
<i>Tringa glareola</i>	Chevalier sylvain	1
<i>Larus genei</i>	Goéland railleur	5,387
<i>Larus ridibundus</i>	Mouette rieuse	80
<i>Larus cirrocephalus</i>	Mouette à tête grise	55
<i>Larus melanocephalus</i>	Mouette mélanocéphale	2
<i>Larus audouinii</i>	Goéland d'Audouin	95
<i>Larus dominicanus</i>	Goéland dominicain	13
<i>Larus fuscus</i>	Goéland brun	12,698
<i>Larus michahellis</i>	Goéland leucophée	2
<i>Sternula albifrons</i>	Sterne naine	316
<i>Gelochelidon nilotica</i>	Sterne hansel	767
<i>Hydroprogne caspia</i>	Sterne caspienne	5,092
<i>Sterna hirundo</i>	Sterne pierregarin	196
<i>Thalasseus sandvicensis</i>	Sterne caugek	1,155
<i>Thalasseus maximus</i>	Sterne royale	861
<i>Pandion haliaetus</i>	Balbusard pêcheur	96
<i>Circus aeruginosus</i>	Busard des roseaux	39

ment d'habitat ou les problèmes directement liés à la santé par les ordures est très étendu, mais la sévérité est modérée. Pour le changement climatique, les effets sont semblables au Baie d'Arguin. Aussi les mesures de conservation et l'implication des populations sont notées sur ce site ; cependant leur efficacité reste à tester.

Recommandations

Pour améliorer les prochains dénombrements il est nécessaire de :

- Avoir des moyens financiers suffisants pour faire le dénombrement efficacement
- Mettre à disposition des moyens logistiques suffisants (véhicules, embarcation)
- Renforcer la capacité des agents de terrain du PNBA à l'identification des oiseaux et la technique de comptage
- Limiter le nombre des participants
- Mettre en place un réseau des compteurs nationaux
- Avoir un modèle de marée spécifique au PNBA
- Suivre les conditions environnementales des sites où nichent et se reproduisent les oiseaux
- Renforcer le partenariat entre les institutions ou ONG qui participent au comptage

Contraintes

Durant ce comptage les moyens financiers sont limités, nous n'avons pas pu couvrir certaines

unités de comptage : Île marguerite, Baie d'Arguin nord-est, Cap Sainte Anne, Îles des pélicans, Agadir-Cap Alzaze et Cap Alzazz-Tagarite.

Par manque d'embarcations suffisantes et d'équipages pour couvrir les unités citées plus haut, aussi le manque des véhicules pour pouvoir déplacer les équipes le long de la côte où il y a des unités de comptage.

ANNEXE

Liste des participants

Amadou KIDE, Ahmed Aflawatt, Azeine Abidine O.Sidati, Moustapha Taleb, Fodé Diawara, Djibril Diallo, Diop Ibrahima, Marc van Roomen (NL), Albert de Jong (NL), Rinse van de Vliet (NL), Jan van Dijk (NL), Romke Kleefstra (NL), Klaus Günther (GER), Morten Benson Hansen (DEN), Lars Soerink (NL), Faouzi Maamouri, Paul Messialle, Mohamed Camara, Ahmed Boubout, BA Mamdou Abdoul, Nahi El Bar, BA Amadou Malick, Ahmedou Mohameden, LY Hamidou, Ahmed Medou, Soukeyna Mint Ely, Sidi Ould Ely, Meimouna Mbeirick, Hama ould Sidiya, Aicha Mint Saad, Ivecou Mohamed.

Liste du comité d'organisation

Ebaye Mohamed Mohmoud, Haj Brahim Bouraya, Abou Gueye, Sedoum Bahah, LY Djibril, Hama Hafed, Sid'Ahmed Guewad, Nagi Heibetty.



Parc National du Diawling (PND)

Comptage global 2020 de la Réserve de Biosphère Trans-frontalière du Bas Delta du fleuve Sénégal, rive droite (RBT-RIM) Mauritanie

Daf Sehla Daf, Zein El Abidine Ould Sidatt, Boubacar M. El Abass Ba & Mohamed Aveloitt



1. INTRODUCTION

Le Parc National du Diawling (PND) est parmi les zones humides littorales d'importance internationale (Site Ramsar) pour l'accueil des oiseaux d'eau en migration ou hivernage sur le littoral atlantique de l'Afrique de l'ouest. Il accueille plusieurs centaines de milliers d'oiseaux d'eau

migrateurs, mais aussi des effectifs significatifs à l'échelle mondiale de plusieurs espèces menacées ou peu abondantes, ex: le Flamant nain, l'Avocette élégante ou la Barge à queue noire. Le 15 janvier de chaque année est institué comme journée d'évaluation des potentialités aviaires de la RBT de part et d'autre du fleuve Sénégal avec la participation des partenaires. Cette activité vient compléter le suivi hebdomadaire des oiseaux d'eau effectué notamment depuis la mise en eau des bassins à partir du mois de juillet. Les données recueillies permettent de renseigner la base de données. Cette dernière permet après traitement de fournir les informations recherchées sur les effectifs, les espèces, les sites de fréquentation, la qualité des oiseaux, les périodes etc. c'est ainsi que la richesse ou fonction des habitats est évaluée.

Elle a été précédée d'une journée de reconnaissance des sites et de formation sur les techniques d'identification et de comptages d'oiseaux au profit des stagiaires arrivés pour le dénombrement.

2. METHODOLOGIE

Le PND couvre une superficie de 16.000ha et répartis en 3 bassins ou unités écologiques (Figure 1). Le dénombrement terrestre du 15 janvier 2020 a concerné les régions écologiques suivantes: le Parc National du Diawling, le ChatTboul, l'Aftout et la Zone périphérique du Parc. Les circuits retenus sont les suivants :

- Circuit 1 : Mare d'Aftout.
- Circuit 2: Lac de Mulet, Grand Lac, Dépression de Chat Boul, Toumbos Nord, Toumbos Sud.
- Circuit 3: Ouvrage de Berbar, Croisement digue nord et digue rive droite, Ouvrage de Cheyal, Echelle de Diawling, Mares juste au nord de l'échelle de Diawling, Digue nord, côte sud digue nord, Bassin de Diawling côté nord en face de l'ancien mirador, Site de nidification colonie.
- Circuit 4: A partir de la Digue de Ziré, longer la digue internationale (Bell Est) jusqu'au Carrefour et Ouvrages de Bell2.
- Circuit 5: Pied de la dune de Ziré côté est, Ouvrage de Berbar, Diawling Tichilitt ancien mirador), Lac de N'Tock, Ouvrage de Lekser.
- Circuit 6: Lac de N'Ter, Ouvrage de Lekser, N'Dernaya, Confluent Khouroumbam, Ghahra au niveau de la plantation des mangroves.
- Circuit 7: 10 km au nord de Chat Boul sur la plage en face d'Aftout jusqu' au port, Face Chat Tboul, Mouly, N'Diago, Mares de N'Diago – Ghahra.
- Circuit 8 : Mare des échasses, Mare de Birette Diama, Confluent N'Thiallakh pour compter au niveau du Rhizophora, En face des épaves, Bras de N'Thiallakh en face d'Ebden, Confluent N'Thiallakh pour compter au niveau du Rhizophora, les alentours et le Bras de N'Thiallakh.
- Circuit 9: Ouvrage d'Aftout, Mares aux alentours du canal d'irrigation, site de nidification de flamants à partir poste de garde, Mare de Keur Macéne en face des périmètres rizicoles, Mares qui se trouvent à côté de l'ouvrage de l'Aftout.

3. RESULTATS

Le dénombrement International des oiseaux d'eau du 15 janvier 2020 effectué dans toute la RBTDS (PND, Aftout Es Saheli, Chat Tboul et Annexes (N'Thiallakh + Lac de N'Ter et le littoral) a donné un effectif global de : 102963 individus représentant 115 espèces contre 115632 individus correspondant à 112 espèces en 2019

4. DISCUSSION

D'importants moyens ont été déployés pour assurer une couverture optimale de l'espace de la RBTDS/RIM. La baisse des effectifs est enregistrée pour la seconde année consécutive. Plusieurs hypothèses peuvent expliquer la réduction des effectifs en 2020.

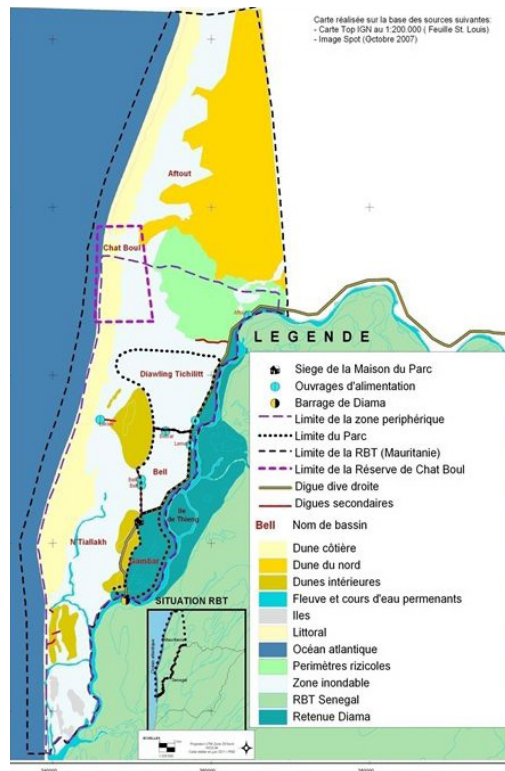


Figure 1: Parc National du Diawling et ses Annexes

- La modification des habitats au niveau des bassins de Bell et du Diawling en raison de la prolifération des plantes invasives de plus en plus abondantes (cypéracées, tamarix, typha)
- L'inaccessibilité des sites d'observation par l'obstruction des plantes qui ne permettent une observation même si les oiseaux sont présents.
- Certains circuits tels que celui du khouroumbam (circuit 6) n'a pas dénombré un effectif important de Dendrocygne dont l'effectif a toujours été plus important. Or aucun circuit n'a pu les observé. Une concentration importante a été observé quelques jours après le comptage et dont la voie d'accès n'avait pas été empruntée auparavant.
- Au niveau d la mare de Birette de grandes concentrations de Dendrocygne n'ont pu être comptées bien que présentes derrière des formations de tamarix de l'autre côté de la berge du bras du fleuve (absence de pirogue).

Le changement climatique le trafic des véhicules et la gestion de l'eau sont d'autres hypothèses avancées par certains. Le comptage des oiseaux d'eau s'est effectué globalement dans de bonnes conditions et les résultats obtenus sont satisfaisants. Nul doute, que le facteur «EAU» est déterminant pour la conservation des habitats de l'avifaune aquatique au Parc National du Diawling.

Tableau 1: Tableau récapitulatif du dénombrement international des oiseaux d'eau du 15 janvier 2020 dans la RBTDS rive droite.

Scientific name	French name	Count 2020	Scientific name	French name	Count 2020
<i>Dendrocygna viduata</i>	Dendrocygne veuf	15,461	<i>Pluvialis squatarola</i>	Pluvier argenté	250
<i>Dendrocygna bicolor</i>	Dendrocygne fauve	2,040	<i>Charadrius hiaticula</i>	Pluvier grand-gravelot	1,885
<i>Alopochen aegyptiaca</i>	Ouette d'Égypte	1,171	<i>Charadrius dubius</i>	Pluvier petit-gravelot	364
<i>Tadorna tadorna</i>	Tadorne de Belon	11	<i>Charadrius pecuarius</i>	Pluvier pâtre	707
<i>Plectropterus gambensis</i>	Oie-armée de Gambie	3,130	<i>Charadrius alexandrinus</i>	Pluvier à collier interrompu	563
<i>Sarkidiornis melanotos</i>	Canard à bosse	24,372	<i>Vanellus spinosus</i>	Vanneau à éperons	1,201
<i>Nettapus auritus</i>	Anserelle naine	87	<i>Vanellus senegallus</i>	Vanneau du Sénégal	2
<i>Marmaronetta angustirostris</i>	Marmaronette marbrée	2	<i>Rostratula benghalensis</i>	Rhynchée peinte	3
<i>Spatula querquedula</i>	Sarcelle d'été	42,438	<i>Actophilornis africanus</i>	Jacana à poitrine dorée	258
<i>Spatula clypeata</i>	Canard souchet	9,087	<i>Numenius phaeopus</i>	Courlis corlieu	1
<i>Anas acuta</i>	Canard pilet	4,602	<i>Limosa lapponica</i>	Barge rousse	25
<i>Tachybaptus ruficollis</i>	Grèbe castagneux	115	<i>Limosa limosa</i>	Barge à queue noire	925
<i>Phoenicopterus roseus</i>	Flamant rose	14,220	<i>Arenaria interpres</i>	Tournepieuvre à collier	3
<i>Phoeniconaias minor</i>	Flamant nain	4,351	<i>Calidris canutus</i>	Bécasseau maubèche	118
<i>Zapornia flavirostra</i>	Marouette à bec jaune	58	<i>Calidris pugnax</i>	Combattant varié	3,015
<i>Porphyrio porphyrio</i>	Talève sultane	1,396	<i>Calidris ferruginea</i>	Bécasseau cocorli	794
<i>Porphyrio alleni</i>	Talève d'Allen	3	<i>Calidris alba</i>	Bécasseau sanderling	988
<i>Gallinula chloropus</i>	Gallinule poule-d'eau	3,500	<i>Calidris alpina</i>	Bécasseau variable	378
<i>Fulica atra</i>	Foulque macroule	719	<i>Calidris minuta</i>	Bécasseau minute	4,615
<i>Balearica pavonina</i>	Grue couronnée	8	<i>Gallinago gallinago</i>	Bécassine des marais	290
<i>Mycteria ibis</i>	Tantale ibis	85	<i>Actitis hypoleucos</i>	Chevalier guigrette	153
<i>Ciconia nigra</i>	Cigogne noire	65	<i>Tringa ochropus</i>	Chevalier cul-blanc	93
<i>Ciconia ciconia</i>	Cigogne blanche	9	<i>Tringa erythropus</i>	Chevalier arlequin	76
<i>Platalea alba</i>	Spatule d'Afrique	30	<i>Tringa nebularia</i>	Chevalier aboyeur	127
<i>Platalea leucorodia</i>	Spatule blanche	3,963	<i>Tringa totanus</i>	Chevalier gambette	60
<i>Threskiornis aethiopicus</i>	Ibis sacré	379	<i>Tringa glareola</i>	Chevalier sylvain	518
<i>Plegadis falcinellus</i>	Ibis falcinelle	1,109	<i>Tringa stagnatilis</i>	Chevalier stagnatile	116
<i>Nycticorax nycticorax</i>	Bihoreau gris	16	<i>Glaucous pratincola</i>	Glaréole à collier	3,987
<i>Butorides striata</i>	Héron strié	3	<i>Larus genei</i>	Goéland railleur	449
<i>Ardeola ralloides</i>	Crabier chevelu	349	<i>Larus ridibundus</i>	Mouette rieuse	182
<i>Bubulcus ibis</i>	Héron garde-boeufs	1,118	<i>Larus cirrocephalus</i>	Mouette à tête grise	227
<i>Ardea cinerea</i>	Héron cendré	1,150	<i>Larus fuscus</i>	Goéland brun	3,857
<i>Ardea melanocephala</i>	Héron mélanocéphale	19	<i>Sternula albifrons</i>	Sterne naine	39
<i>Ardea purpurea</i>	Héron pourpré	44	<i>Gelochelidon nilotica</i>	Sterne hansel	528
<i>Ardea alba</i>	Grande Aigrette	868	<i>Hydroprogne caspia</i>	Sterne caspienne	946
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	161	<i>Chlidonias hybrida</i>	Guifette moustac	79
<i>Egretta ardesiaca</i>	Aigrette ardoisée	29	<i>Chlidonias leucopterus</i>	Guifette leucoptère	137
<i>Egretta garzetta</i>	Aigrette garzette	2,592	<i>Chlidonias niger</i>	Guifette noire	7
<i>Egretta gularis</i>	Aigrette à gorge blanche	71	<i>Sterna hirundo</i>	Sterne pierregarin	1
<i>Pelecanus rufescens</i>	Pélican gris	1	<i>Thalasseus sandvicensis</i>	Sterne caugek	2,165
<i>Pelecanus onocrotalus</i>	Pélican blanc	7,426	<i>Thalasseus maximus</i>	Sterne royale	133
<i>Microcarbo africanus</i>	Cormoran africain	569	<i>Pandion haliaetus</i>	Balbuzard pêcheur	82
<i>Phalacrocorax carbo</i>	Grand Cormoran	6,415	<i>Circus aeruginosus</i>	Busard des roseaux	122
<i>Anhinga rufa</i>	Anhinga d'Afrique	59	<i>Haliaeetus vocifer</i>	Pygargue vocifer	8
<i>Burhinus senegalensis</i>	Oedicnème du Sénégal	35	<i>Corythornis cristatus</i>	Martin-pêcheur huppé	2
<i>Recurvirostra avosetta</i>	Avocette élégante	243	<i>Ceryle rudis</i>	Martin-pêcheur pie	68
<i>Himantopus himantopus</i>	Échasse blanche	3,226			

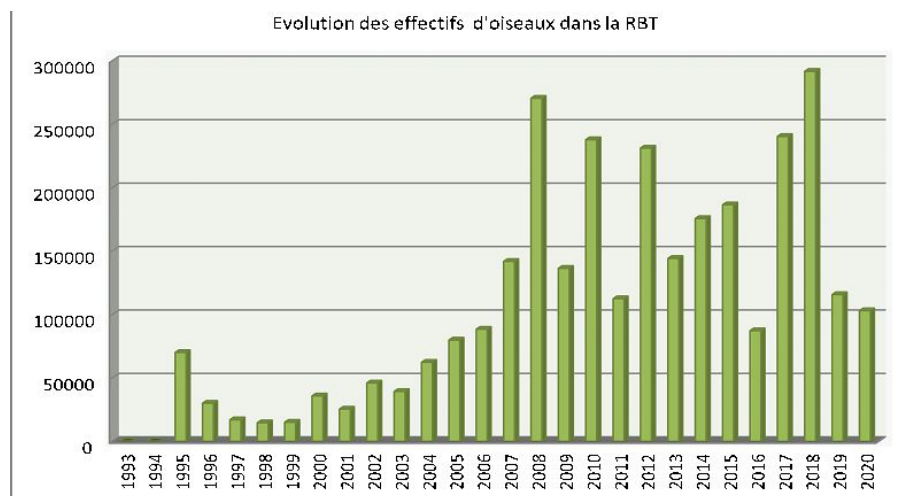


Figure 2 : Evolution des effectifs d'oiseaux d'eau 1993-2020

En outre, la prolifération des plantes aquatiques dans les bassins du Parc est à prendre en compte dans le futur plan d'action de lutte contre les espèces envahissantes.

Recommandations

- Engager des actions plus efficaces et de grande envergure dans la lutte contre toutes les plantes invasives au risque de perdre les fonctions essentielles de l'aire protégée.
- Accorder plus de temps à la prospection des sites au moins 3 jours avant le comptage proprement dit du 15janviereen procédant à des comptages préliminaires essentiels afin de faire une évaluation fiable des effectifs et des espèces qui évoluent dans l'espace de la RBTDS.
 - Couvrir la zone du fleuve avec un circuit pirogue
 - Dégager les proposis qui entravent l'accès à la mare des échasses
 - Faire des échanges d'informations avec le Djouj avant et après le comptage
 - Mettre un poste de surveillance permanent au niveau du site de nidification du Tichilit
 - Introduire deux jours de formation pratique sur les techniques avant le dénom-

brement à l'intention du personnel de la société civile et des ministères conviés.

Remerciements

Le Parc National du Diawling (PND) adresse ses vifs remerciements à l'ensemble de ses partenaires techniques et financiers ayant participé, à titre divers, à la réalisation de cette activité de dénombrement international des oiseaux d'eau dans la Réserve de Biosphère Transfrontière du delta du fleuve Sénégal, rive droite/Mauritanie. Le PND adresse particulièrement sa reconnaissance à la Direction des Aires Protégées et du Littoral (DAPLMEDD), la Fondation MAVA, le BACoMaB, AMISO, WETLANDS International, Wadden Sea Flyway Initiative, WTB, NAFORE, Nature Mauritanie et les volontaires ayant contribué aux opérations de comptage.

ANNEXE

Liste des compteurs (observateurs)

Daf Sehla Daf, Md Moctar, Mohamed Aveloitt, Saadana Abdel Wahab, Zein El Abidine Ould Sidatt, El Bekaye Ould Sidi Aly, Moussa Ould Daour, Saer Kayer Diagne, Boubacar M. El Abass Ba, Pape Adama Diop, Traoré Fousseynou, Ba Oumar Adama, Cheikh Ould Alioune, Mohamed Abdellahi, Abdallahi Mouhamdou, Elemine Ould Mohamed, Md Ould Mbedj, Ismail chrova, Yacoub Diakité, Dia abdallahi, Yarg Ould Alioune, Ahmed Meynat, Ahmed Deymoni, Abdallahi Magrega, Cheikh Omar N'Gaide, Hamidine, Ba Amadou Diam, Mamadou Bocar BA, Djibril Diallo, Mohamed Ndiaye, Sidi Diawara, Oumar Awe, Niang

18. Senegal



RAPPORT DU DENOMBREMENT DES OISEAUX D'EAU 2020, SENEGAL

Ibrahima Guèye, Aminata Sall Diop, Aissatou Niass,
Ministère de L'Environnement et du Développement Durable,
Direction des Parcs Nationaux,
République du Sénégal.



1. INTRODUCTION

Le Sénégal est un pays sahélien qui couvre une superficie d'environ 196.722 km². Il présente une côte de près de 700 km et des écosystèmes favorables à la fréquentation des oiseaux d'eau. Le Dénombrement International des Oiseaux d'Eau se déroule chaque année au Sénégal sur l'ensemble du territoire avec comme priorités les zones humides les plus importantes du pays.

2. METHODES

Sites et secteurs

Pour une meilleure organisation le territoire national a été divisé en six (06) grandes zones de comptage subdivisées en 35 sites et 137 secteurs.

La zone Nord

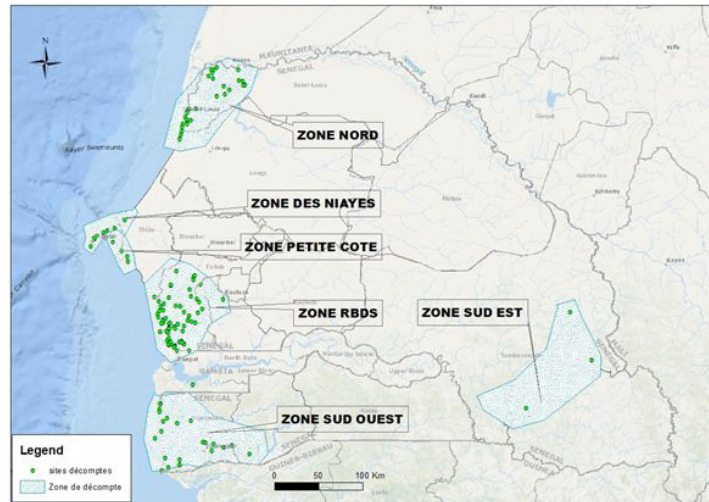
La zone Nord regroupe la quasi-totalité des sites de la Réserve de Biosphère Transfrontière du Delta du Fleuve Sénégal (RBTDFS) qui sont :

- Parc National des Oiseaux du Djoudj (PNOD),
- Réserve Spéciale de Faune de Gueumbeul (RSFG),
- Parc National de la Langue de Barbarie (PNLB),
- Réserve Spéciale d'Avifaune de Ndiael (RSAN),
- Réserve Naturelle Communautaire de Tocc Tocc,
- Ville de Saint Louis et alentours
- Aire marine protégée de Saint-Louis (AMP SL).

La zone des Niayes

Pour cette zone, un circuit de décompte allant de Dakar à Kayar est parcouru avec comme principaux sites de décompte :

- Réserve Naturelle Urbaine de la Grande Niayes de Pikine (RNUGNP) (Technopole),
- Lac Mbeubeuss,



Carte 1: Répartition des zones de dénombrement au Sénégal

- Lac Wouye,
- Lac Tanma,
- Plage de l'Aire Marine Protégée de Cayar,
- Lac Rose,
- Lac Mbawane,
- Zone de captage,
- Lac zoo de Hann.

La zone de la Petite Côte

Au niveau de la Petite Côte les sites ci-après ont fait l'objet de décompte :

- Parc National des Îles de la Madeleine (PNIM),
- Aire Marine Protégée de Joal (AMPJ),
- Réserve Naturelle d'Intérêt Communautaire de la Somone (RNICS),
- Réserve Naturelle de Popenguine (RNP),
- Réserve Naturelle Communautaire de Palmarin (RNCP),
- Axe Rufisque – Bargny plage– Sendou

Nous avons ici les points d'eau côtiers qui sont souvent naturels ou artificiels.

La Réserve de Biosphère du Delta du Saloum (RBDS)

Dans cette zone, l'ensemble des secteurs qui sont d'un nombre assez important ont été regroupés avec les principales aires protégées de la Réserve de Biosphère en plus des secteurs forestiers de Fatick et de Kaolack. Nous avons ainsi les sites de décompte ci-dessous :

- Parc National du Delta du Saloum (PNDS),
- Aire Marine Protégée de Bamboung (AMPB),
- Aire Marine Protégée de Sangomar (AMPS),
- Aire Marine Protégée de Gandoule (AMPG),
- Secteur de Fatick, le Secteur de Kaolack

La RBDS est une zone estuarienne avec les vasières, les mangroves, les marais salins, les eaux peu profondes où les oiseaux viennent se nourrir. C'est aussi une zone marine avec des plages où se reproduisent les oiseaux. Les herbiers marins sont importants dans la zone.

La zone Sud

Les sites concernés sont les zones humides du Sud autour desquelles l'activité de dénombrement va s'organiser. Il s'agit entre autres de :

- Aire Marine Protégée d'Abéné (AMPA),
- Réserve Ornithologique de Kalissaye (ROK),
- Parc National de la Basse Casamance (PNBC),
- AMP de Niamone Kalounayes (AMPNK),
- AMP de Cassa Balantacounda (AMPKB),
- Projet d'AMP Boucle du Blouf.

C'est une zone de mangroves, de marais salins, d'eaux peu profondes que les oiseaux fréquentent pour se nourrir. C'est aussi une zone marine avec des plages où se reproduisent les oiseaux.

La zone sud-est

- Mares du Parc National du Niokolo Koba (PNNK) qui sont principalement décomptées dans cette zone.
- Mares de Simenti, Dalafourounté, Impanti, Kandi Kandi, Kountadala, Mansadala, de Nianaka, Oudassi, Sitendi, Woeni et Woeniri.
- Mares de la RNC de Boundou,
- Zone d'Intérêt Cynégétique (ZIC) de la Falémé.

Les lacs et plans d'eau de la zone accueillent des oiseaux d'eau même si leur nombre n'est pas important. Ils jouent un rôle important dans la migration Est Atlantique.

Logistique

La réalisation du dénombrement a nécessité, un équipement en matériel spécifique de comptage des espèces d'avifaune. En fonction de la configuration des différents sites, divers moyens de déplacement ont été mis à contribution. Ainsi, pour l'ensemble des sites, des véhicules de terrain ont été mobilisés. Pour des sites avec des plans d'eau comme le PNOD, la RBDS, le PNLB et le PNIM, nous avons utilisés des moyens supplémentaires, comme des pirogues motorisées.

Le partenariat actif entre les services du Ministère de l'Environnement et du Développement durable impliqués dans le dénombrement en l'occurrence la DPN, la DEFCCS et la DAMCP a permis une bonne coordination et une organisation correcte de l'activité. Le DIOE a également vu la participation active :

- Des populations locales représentées par les éco-gardes et les éco-guides,
- de l'association Nature-Communauté-Développement (NCD),
- des ONG environnementales (Wetlands International Afrique, BirdLife, etc.),
- des chercheurs et des universitaires,
- des personnes de bonne volonté de nationalité sénégalaise ou étrangère.

Compte tenu de l'étendue des zones à couvrir, les compteurs ont été répartis en plusieurs équipes couvrant l'ensemble des secteurs de décompte au Sénégal.

Méthodologie

Le dénombrement se déroule suivant un dispositif conçu habituellement par la DPN. Pour ce faire, une séance de mise à niveau de deux (02) jours est organisée avant le dénombrement proprement dit au profit des observateurs. Cette session de formation a pour objectif de :

- Renforcer les capacités des acteurs sur les techniques d'identification et de comptage des espèces,
- Appropriation et maîtrise du remplissage des fiches standards de collecte des données. S'agissant de la collecte, les méthodes adoptées sont celles du comptage direct à pied, en véhicule et/ou en pirogue et en point fixe.

Le décompte démarre entre 6 heures et 7 heures 30 mn et prend fin généralement en fin de matinée pour la plupart des sites. Les notes prises sur le terrain se font au crayon et à la fin de l'opération, les données sont définitivement reportées sur les fiches standards (fiches de comptage et environ-

nementale), après vérification. Elles récapitulent le nombre total d'espèces observées, le nombre total d'individus compté par espèce ainsi que l'effectif cumulé. Elles donnent également des renseignements sur la localisation du site, les heures de début et de fin de comptage, les conditions météorologiques ainsi que l'état du site de comptage en termes de menaces et de pressions anthropiques. Une fois renseignées, les fiches sont envoyées à la DPN où les données sont classées, traitées puis analysées.

3. RESULTATS

463510 individus répartis en 146 espèces et 39 familles ont été comptés durant le dénombrement international des oiseaux d'eau de l'édition 2020 au Sénégal (Tableaux 1).

Selon les statistiques, la Zone Nord est la plus fréquentée avec 297162 individus de 96 espèces suivie de la RBDS avec 78700 individus de 97

Tableau 1: Répartition par zone des espèces au niveau national

ZONE	EFFECTIF	POUCENTAGE
NORD	297162	64%
RBDS	78700	17%
PETITE COTE	36346	8%
CASAMNACE	35081	8%
NIAYES	11469	2%
SUD EST	4752	1%
TOTAL	463510	100%

espèces, de la zone Petite côte avec 36346 individus de 73 espèces, de la zone de la Casamance avec 35081 individus de 81 espèces, de la zone des Niayes avec 11469 individus de 63 espèces et de la zone Sud Est avec 4752 individus de 52 espèces. (Tableaux 2). L'espèce la plus présente au niveau national est le canard pilet (22%) contrairement à l'année dernière quand la sarcelle d'été constituée l'espèce dominante. Les dendrocygnes veuf viennent en deuxième position avec 8% suivi des flamants rose et nain avec respectivement 8% et 7%, le grand cormoran, les sarcelles d'été, le goéland brun, la mouette à tête grise, le goéland railleur, les sternes caspiennes suivent du point de vue effectif. Les effectifs de sarcelles d'été ont beaucoup chuté cette année avec 19564 individus contre 176377 en 2019. Les dendrocygnes ont également vu leur nombre en baisse car en 2019 le décompte avait donné 91038 individus alors que cette année il n'y a eu que 37537 individus.

Tableau 2: Récapitulatif du dénombrement du janvier 2020 au Sénégal

Scientific name	French name	Total 2020	Scientific name	French name	Total 2020
<i>Dendrocygna viduata</i>	Dendrocygne veuf	37,537	<i>Charadrius pecuarius</i>	Pluvier pâtre	233
<i>Dendrocygna bicolor</i>	Dendrocygne fauve	422	<i>Charadrius tricollaris</i>	Pluvier à triple collier	10
<i>Alopochen aegyptiaca</i>	Ouette d'Égypte	393	<i>Charadrius marginatus</i>	Pluvier à front blanc	28
<i>Plectropterus gambensis</i>	Oie-armée de Gambie	582	<i>Charadrius alexandrinus</i>	Pluvier à collier interrompu	1,527
<i>Sarkidiornis melanotos</i>	Canard à bosse	387	<i>Vanellus spinosus</i>	Vanneau à éperons	4,541
<i>Nettapus auritus</i>	Anserelle naine	261	<i>Vanellus senegallus</i>	Vanneau du Sénégal	143
<i>Spatula querquedula</i>	Sarcelle d'été	19,564	<i>Rostratula benghalensis</i>	Rhynchée peinte	2
<i>Spatula clypeata</i>	Canard souchet	2,707	<i>Actophilornis africanus</i>	Jacana à poitrine dorée	1,729
<i>Anas acuta</i>	Canard pilet	101,233	<i>Numenius phaeopus</i>	Courlis corlieu	4,079
<i>Anas crecca</i>	Sarcelle d'hiver	263	<i>Numenius arquata</i>	Courlis cendré	475
<i>Tachybaptus ruficollis</i>	Grèbe castagneux	216	<i>Limosa lapponica</i>	Barge rousse	3,573
<i>Phoenicopterus roseus</i>	Flamant rose	35,082	<i>Limosa limosa</i>	Barge à queue noire	4,033
<i>Phoeniconaias minor</i>	Flamant nain	31,097	<i>Arenaria interpres</i>	Tournepiere à collier	1,127
<i>Rallus aquaticus</i>	Râle d'eau	4	<i>Calidris canutus</i>	Bécasseau maubèche	491
<i>Zapornia flavirostra</i>	Marouette à bec jaune	107	<i>Calidris pugnax</i>	Combattant varié	3,073
<i>Porphyrio porphyrio</i>	Talève sultane	165	<i>Calidris ferruginea</i>	Bécasseau cocorli	5,044
<i>Gallinula chloropus</i>	Gallinule poule-d'eau	140	<i>Calidris alba</i>	Bécasseau sanderling	1,967
<i>Balearica pavonina</i>	Grue couronnée	114	<i>Calidris alpina</i>	Bécasseau variable	949
<i>Leptoptilos crumenifer</i>	Marabout d'Afrique	1	<i>Calidris minuta</i>	Bécasseau minute	7,485
<i>Mycteria ibis</i>	Tantale ibis	1,524	<i>Gallinago gallinago</i>	Bécassine des marais	18
<i>Ciconia nigra</i>	Cigogne noire	189	<i>Actitis hypoleucos</i>	Chevalier guignette	774
<i>Ciconia microscelis</i>	Cigogne épiscopale	13	<i>Tringa ochropus</i>	Chevalier cul-blanc	328
<i>Ciconia ciconia</i>	Cigogne blanche	101	<i>Tringa erythropus</i>	Chevalier arlequin	153
<i>Platalea alba</i>	Spatule d'Afrique	678	<i>Tringa nebularia</i>	Chevalier aboyeur	1,135
<i>Platalea leucorodia</i>	Spatule blanche	2,286	<i>Tringa totanus</i>	Chevalier gambette	1,907
<i>Threskiornis aethiopicus</i>	Ibis sacré	744	<i>Tringa glareola</i>	Chevalier sylvain	162
<i>Bostrychia hagedash</i>	Ibis hagedash	74	<i>Tringa stagnatilis</i>	Chevalier stagnatile	94
<i>Plegadis falcinellus</i>	Ibis falcinelle	769	<i>Glareola pratincola</i>	Glaréole à collier	107
<i>Nycticorax nycticorax</i>	Bihoreau gris	10,355	<i>Larus genei</i>	Goéland railleur	12,981
<i>Butorides striata</i>	Héron strié	38	<i>Larus ridibundus</i>	Mouette rieuse	16
<i>Ardeola ralloides</i>	Crabier chevelu	851	<i>Larus cirrocephalus</i>	Mouette à tête grise	17,674
<i>Bubulcus ibis</i>	Héron garde-boeufs	4,692	<i>Larus audouinii</i>	Goéland d'Audouin	227
<i>Ardea cinerea</i>	Héron cendré	2,263	<i>Larus dominicanus</i>	Goéland dominicain	38
<i>Ardea melanocephala</i>	Héron mélanocéphale	56	<i>Larus fuscus</i>	Goéland brun	19,366
<i>Ardea goliath</i>	Héron goliath	118	<i>Sternula albifrons</i>	Sterne naine	639
<i>Ardea purpurea</i>	Héron pourpré	212	<i>Gelochelidon nilotica</i>	Sterne hansel	1,121
<i>Ardea alba</i>	Grande Aigrette	2,728	<i>Hydroprogne caspia</i>	Sterne caspienne	11,836
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	149	<i>Chlidonias hybrida</i>	Guifette moustac	706
<i>Egretta ardesiaca</i>	Aigrette ardoisée	489	<i>Chlidonias leucopterus</i>	Guifette leucoptère	53
<i>Egretta garzetta</i>	Aigrette garzette	9,935	<i>Chlidonias niger</i>	Guifette noire	61
<i>Egretta gularis</i>	Aigrette à gorge blanche	4,758	<i>Sterna hirundo</i>	Sterne pierregarin	6
<i>Scopus umbretta</i>	Ombrette africaine	386	<i>Thalasseus bengalensis</i>	Sterne voyageuse	3
<i>Pelecanus rufescens</i>	Pélican gris	3,000	<i>Thalasseus sandvicensis</i>	Sterne caugek	3,909
<i>Pelecanus onocrotalus</i>	Pélican blanc	11,496	<i>Thalasseus maximus</i>	Sterne royale	4,690
<i>Microcarbo africanus</i>	Cormoran africain	6,576	<i>Pandion haliaetus</i>	Balbuzard pêcheur	772
<i>Phalacrocorax carbo</i>	Grand Cormoran	21,425	<i>Gypohierax angolensis</i>	Palmiste africain	12
<i>Anhinga rufa</i>	Anhinga d'Afrique	881	<i>Circus aeruginosus</i>	Busard des roseaux	143
<i>Burhinus senegalensis</i>	Oedicnème du Sénégal	666	<i>Haliaeetus vocifer</i>	Pygargue vocifer	33
<i>Pluvianus aegyptius</i>	Pluvian fluviatile	272	<i>Corythornis cristatus</i>	Martin-pêcheur huppé	18
<i>Haematopus ostralegus</i>	Huitrier pie	2,229	<i>Alcedo atthis</i>	Martin-pêcheur d'Europe	22
<i>Recurvirostra avosetta</i>	Avocette élégante	6,800	<i>Megaceryle maxima</i>	Martin-pêcheur géant	10
<i>Himantopus himantopus</i>	Échasse blanche	4,176	<i>Ceryle rudis</i>	Martin-pêcheur pie	608
<i>Pluvialis squatarola</i>	Pluvier argenté	1,684			
<i>Charadrius hiaticula</i>	Pluvier grand-gravelot	7,514			
<i>Charadrius dubius</i>	Pluvier petit-gravelot	1,591			

4. DISCUSSION

Le DIOE 2020 a permis de:

- visiter 137 points d'eau fréquentés par les oiseaux d'eau à travers le Sénégal et estimer le nombre qui a fréquenté le pays durant cette campagne de 2020;
- renforcer la formation des acteurs intervenant dans le suivi des oiseaux d'eau;
- améliorer la collaboration entre les différents acteurs qui interviennent dans la conservation des oiseaux d'eau et leurs habitats;

Parmi les recommandations:

- le renforcement des équipes de compteurs dans certaines zones pour que les activités puissent se dérouler au même moment afin d'éviter le double comptage des individus ou d'ignorer d'autres sites fréquentés par les oiseaux d'eau;
- la cartographie des plans d'eau qui doivent faire l'objet de décompte et l'aménagement des circuits pour le suivi écologique :
- un plaidoyer pour le classement des sites fréquentés par les oiseaux d'eau et sans statut de protection comme Mbeubeuss, lac Rose;
- l'augmentation du matériel de terrain (les jumelles, les télescopes, les guides en quantité et en qualité, les appareils photos ...);
- l'élaboration d'une fiche avec l'ensemble des espèces de la zone ce qui permettrait de voir si de nouvelles espèces sont apparues ou non;
- Le développement d'une approche participative associant les acteurs locaux (collectivités territoriales, OCB et OSC sensibles à l'environnement, occupants du site, privés ayant un intérêt pour le site...) et la sensibilisation sur l'importance de conserver les oiseaux d'eau et leurs habitats;
- Le renforcement de la formation des agents et éco-guides qui participent régulièrement aux activités de décompte.
- Le nettoyage des cours d'eau des plantes envahissantes qui bloquent la navigation.

Remerciements

La DPN remercie l'ensemble des participants à cette activité de décompte. Particulièrement les collaborateurs comme Wetlands international, Wadden Sea Flyway Initiative, Bird Life international, NCD, la Fondation MAVA, PRCM, Volontaires Ecogardes des Parcs, les agents de la DEFCCS mais aussi des Parcs, Réserves et AMP.

ANNEXES

Liste des Observateurs

Lt Colonel Ibrahima GUEYE, Lt Colonel Babacar Ngor Youm, Samuel Diémé, Lt Ablaye, Ndiaye, Cdt Abdou NDIOGUE, Cne Ndiagua FAYE, Sgt Adama DIALLO, Astou NIANG, Waly NGOM, Saliou Fall NDIAYE, Harona SEYDI, Cdt El hadji Samba Camara, Cdt Elimane Malick SY, GPN Daouda Seydi, Sassy Ndiaye, Mbacké SY, Kadialy DIEDHIOU, Adama léne, Landing TRAORE, Elhadji Mamadou MARONE, Mamadou NDOUR, Cne Lamine KANTE, Lt Amdy SAMB, Sgt Oumar DIALLO, Sgt Moctar DIAITE, GPN Abdourahmane THIOBANE, Amy SY, Yaya SARR, Sira DOUMBIA, Famara NDONG, Birame SARR, Mamadou NDIAYE, Djibril K. DIEDHIOU, Babacar NDIAYE, Elhadji M. DIENG, Mariama DIOUME, Nogaye SYLLA, Fatou NDIAYE, Mapathe DJIBA, Ibrahima NDIAYE, BOUCAR NDIAYE, Cheikh Niang, Seydina Issa Sylla, Alioune Ndiaye, Barome NDAO, Fatou Ndiaye, Lansana Sambou, Adama BADIANE, Jean F A DIOR, Khali-pha GAYE, Jean-Marie DUPART, Mahoumoudou TALL, Oumar Mody BARRY, Babacar NDIAYE, Amadou Gueye FALL, ABOU DIOP, Mouhamadine SECK, Fallou FALL, Babacar Gueye Sène, Omar SALL, Ibrahima KH Thiaw, Com.Ousseynou Niang, Amadou Diop, Lieutenant Ansoumana Sonko, Gpn Tafsir Diop, Demba Dioum, Sergent Kadim Gningue, Sergent Jean Paul DIOUF, 69. Mamadou Aliou Ba, Francois Sagna, Mamadou FAYE, Joseph MINGOU, Valentin MANSALY, Seckou Moussa SAGNA, Aissatou BADJI, Yaya Souleymane BODIAN, Papa Mor Faye, Alioune Badara Séne, Ousseynou Diatta, LT Mamadou L SANE, Paul DIATTA, Ismaila FATY, Lt Abdoulaye SAGNA, GPN Philippe Ambroise DIEME, GPN Donato Mbissane SAR, Aissatou DIEDHIOU, Assane NDOYE, Yankhoba MBODJ, Issakha NDIAYE, Youssouph DIALLO, Ibrahima Ndao, Maniang DIOP, Aliou Kane, Pape Yamar Niang, Ndaga Ngane, Pape Médoune Gueye, Mbaye Diop, Cdt Aminnata SALL, Cne Fatima BA, Cne MameAissatou NIASSE, Lt Assane Fall, Moussa Séga DIOP, Sgt Meissa SAMB, Aissatou Yvette Diallo, Youssouph DIEDHIOU, Cne Basile SAGNA, Lt Saliou SATHIE, Libasse NDOYE, Sgt Omar NDAO, Sgt Lansana SAMBOU, Sgt Ibou SANE, GPN Daniel DIATTA, Malick NDIAYE, Ousmane SECK, Issa KADAM, Moussa SOW, Amadou SECK, Cdt Abdou AZIZ NDIAYE, Lt Khatab DIOP, Lt El hadji Baboucar NDIAYE, Lt Nicolas Benty GOMIS, Lt Pape boubou SOW, Coumba gana NIANG, Cdt Paul Moise Diedhiou, Lt Baboucar Ndiaye, Lt Fatou Mane, Lt Alioune Badara Sylla, Sgt Farouma Gueye, Agents du parc national du Niokolo koba, Commandant Moussa NDOUR, Agents et pisteurs de la ZIC Falémé, Abdou DIOUF, Benjamin BUREAU, Abdoulaye KANTE, Mouhamed KANTE

19. The Gambia



International Waterbird Census (IWC), Total count 2020 in The Gambia

Abdoulie Sawo, Nuha Jammeh and Kawsu Jammeh. Department of Parks and Wildlife Management, The Gambia.



1. INTRODUCTION

The International Waterbird Census is a national inventory and monitoring of waterbirds and their habitats. International Waterbird Census 2020 as usual was carried in January as part of a total count, which covers sites including sub-sites, comprising both marine and freshwater areas. A total number of 44,764 birds were counted within 22 previously counted sites and 6 new sites. Due to changes in habitats geomorphology, waterbirds have change their occurrence and habitat characteristics resulting to discovery of

new and abandonment of old sites. The count was carried out by 10 participants representing Government, NGO and National Park Wadden Sea Niedersachsen in Germany plus 2 drivers and also the process was supported by local guides at different locations/ sites.

2. METHODS

Since 1998, the Gambia conducted annual waterbirds Census in most protected areas, Important Bird Areas and Ramsar Sites. Due to insufficient financing, some years the study is focused only on coastal wetlands. This year's census covers 28 sites, amongst which 6 are new sites (Figure 1). Four of our previous sites were not counted (Bambali, Dankunku, Sambang and Sutukung since the sites are no longer suitable for waterbird landing due to over flooding and reed bed colonization of the sites. This reed bed colonization is attributed to sea level rise and excessive use of fertilizer.

Training sessions was organized including preparatory in two folds; theory and practical for a period of two days. The census was carried out through travelling across the country with two vehicles to various counting sites. The group is divided into two groups making it possible to count two sites or sub-sites concurrently. Each team share the task among them through assigning different individuals to recording, citing, identification, GPS coordinate taking, counting, site description etc. Counting method includes walking and counting and in boat counting.

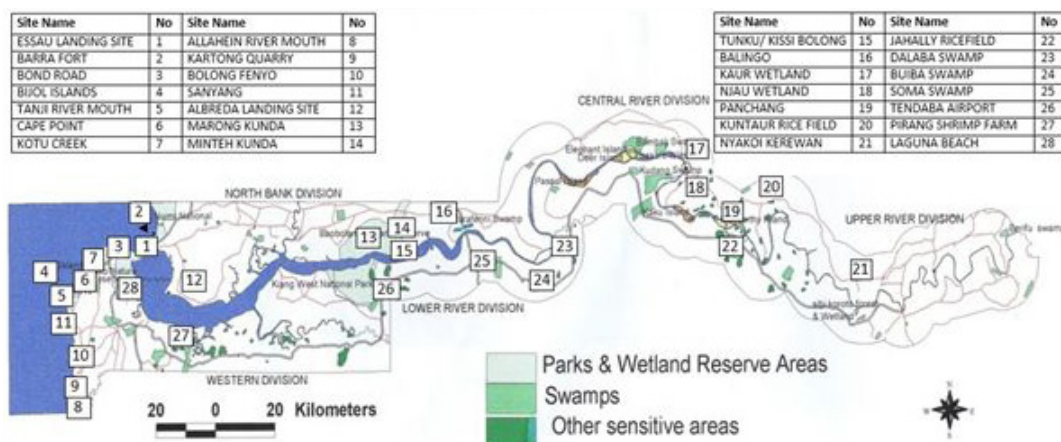


Figure 1. Locations counted during January 2020, numbers refer to the site names below.

Others institutions, organizations or associations involved

- Department of Parks and Wildlife Management
- Wadden Sea National Park of Niedersachsen, Germany
- West African Bird Studies Association
- Local people

3. RESULTS

94 species counted in 28 sites including sub-sites which amount to 44,764 individual birds (Table 1).

Specific threats to sites

- Weed invasion in Central River Region and Kotu Creek
- Coastal erosion along the seaside in West Coast Region, North Bank Region and Greater Banjul particularly for the nesting sites of Bijol Islands
- Eutrophication in Gunjur.

4. DISCUSSION

Difficulties encountered, quality and coverage of the count

The main challenges were

- Proper access roads
- Access to materials such as boat in the case of Jokadu National Park
- Prior determination of the situation at count sites
- Access to some sites within the main sites
- Dyke construction in Baobolong Wetland Reserve leading to saline intrusion in rice growing areas

- Road construction along Baobolon Highway affect the hydrology system and cause complete dryness.

Conclusion and Recommendations

The counting sites are wide and some part inaccessible. Use of drone would help enable us to cover sites extensively. The team will engage at least two protected area staff at their localities to join while counting sites under their jurisdiction. Finally, the team discovered a new nesting site for the past two years at Tunku\ Kissi bolon in Baobolon Wetland Reserve for the Great Cormorants.

Acknowledgements

The Department of Parks and Wildlife Management under the auspices of the Ministry of Environment Climate Change and Natural Resources and our partners West African Bird Study Association wishes to thank WADDEN SEA Germany for their financial and technical support, and Wetland International Africa Office in Dakar for their valuable contribution towards the successful implementation of the IWC 2020 Count. The contribution of Wandji Touray, a bird guide working for Tendaba Camp for making the count a success.

ANNEX

List of counters (observers)

Abdoulie Sawo, Kawsu Jammeh, Sajo NN Manneh, Nuha Jammeh, Peter Sudbeck, Bernd Oltmanns, Mansata Kolley, Fagimba Camara, Pa Sanyang, Jerreh Njie

Table 1: Total numbers counted per species.

Scientific name	English name	Total 2020
<i>Dendrocygna viduata</i>	White-faced Whistling-duck	156
<i>Plectropterus gambensis</i>	Spur-winged Goose	249
<i>Nettapus auritus</i>	African Pygmy-goose	24
<i>Tachybaptus ruficollis</i>	Little Grebe	10
<i>Zapornia flavirostra</i>	Black Crake	21
<i>Porphyrio porphyrio</i>	Purple Swamphen	6
<i>Gallinula chloropus</i>	Common Moorhen	8
<i>Balearica pavonina</i>	Black Crowned-crane	4
<i>Leptoptilos crumenifer</i>	Marabou	20
<i>Mycteria ibis</i>	Yellow-billed Stork	55
<i>Ciconia microscelis</i>	African Woollyneck	16
<i>Ciconia ciconia</i>	White Stork	2
<i>Platalea alba</i>	African Spoonbill	586
<i>Platalea leucorodia</i>	Eurasian Spoonbill	56
<i>Threskiornis aethiopicus</i>	African Sacred Ibis	186
<i>Bostrychia hagedash</i>	Hadada Ibis	9
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	6
<i>Butorides striata</i>	Green-backed Heron	10
<i>Ardeola ralloides</i>	Squacco Heron	388
<i>Bubulcus ibis</i>	Cattle Egret	1,050
<i>Ardea cinerea</i>	Grey Heron	259
<i>Ardea melanocephala</i>	Black-headed Heron	84
<i>Ardea goliath</i>	Goliath Heron	1
<i>Ardea purpurea</i>	Purple Heron	23
<i>Ardea alba</i>	Great White Egret	313
<i>Ardea brachyrhyncha</i>	Yellow-billed Egret	346
<i>Egretta ardesiaca</i>	Black Heron	173
<i>Egretta garzetta</i>	Little Egret	99
<i>Egretta gularis</i>	Western Reef-egret	388
<i>Scopus umbretta</i>	Hamerkop	113
<i>Pelecanus rufescens</i>	Pink-backed Pelican	392
<i>Pelecanus onocrotalus</i>	Great White Pelican	25
<i>Microcarbo africanus</i>	Long-tailed Cormorant	247
<i>Phalacrocorax carbo</i>	Great Cormorant	6,179
<i>Anhinga rufa</i>	African Darter	244
<i>Burhinus senegalensis</i>	Senegal Thick-knee	304
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	2
<i>Recurvirostra avosetta</i>	Pied Avocet	1,160
<i>Himantopus himantopus</i>	Black-winged Stilt	503
<i>Pluvialis squatarola</i>	Grey Plover	149
<i>Charadrius hiaticula</i>	Common Ringed Plover	725
<i>Charadrius dubius</i>	Little Ringed Plover	109
<i>Charadrius pecuarius</i>	Kittlitz's Plover	50
<i>Charadrius alexandrinus</i>	Kentish Plover	52
<i>Vanellus spinosus</i>	Spur-winged Lapwing	1,370

Scientific name	English name	Total 2020
<i>Vanellus senegallus</i>	Wattled Lapwing	418
<i>Rostratula benghalensis</i>	Greater Painted-snipe	47
<i>Actophilornis africanus</i>	African Jacana	10,891
<i>Microparra capensis</i>	Lesser Jacana	9
<i>Numenius phaeopus</i>	Whimbrel	219
<i>Numenius arquata</i>	Eurasian Curlew	22
<i>Limosa lapponica</i>	Bar-tailed Godwit	57
<i>Limosa limosa</i>	Black-tailed Godwit	573
<i>Arenaria interpres</i>	Ruddy Turnstone	173
<i>Calidris pugnax</i>	Ruff	337
<i>Calidris ferruginea</i>	Curlew Sandpiper	314
<i>Calidris alba</i>	Sanderling	279
<i>Calidris alpina</i>	Dunlin	10
<i>Calidris minuta</i>	Little Stint	1,072
<i>Gallinago gallinago</i>	Common Snipe	41
<i>Actitis hypoleucos</i>	Common Sandpiper	99
<i>Tringa ochropus</i>	Green Sandpiper	17
<i>Tringa erythropus</i>	Spotted Redshank	16
<i>Tringa nebularia</i>	Common Greenshank	191
<i>Tringa totanus</i>	Common Redshank	57
<i>Tringa glareola</i>	Wood Sandpiper	181
<i>Tringa stagnatilis</i>	Marsh Sandpiper	13
<i>Glareola pratincola</i>	Collared Pratincole	1,864
<i>Rynchops flavirostris</i>	African Skimmer	7
<i>Larus genei</i>	Slender-billed Gull	729
<i>Larus cirrocephalus</i>	Grey-headed Gull	3,801
<i>Larus audouinii</i>	Audouin's Gull	95
<i>Larus dominicanus</i>	Kelp Gull	12
<i>Larus fuscus</i>	Lesser Black-backed Gull	755
<i>Sternula albifrons</i>	Little Tern	143
<i>Gelochelidon nilotica</i>	Common Gull-billed Tern	393
<i>Hydroprogne caspia</i>	Caspian Tern	1,041
<i>Sterna hirundo</i>	Common Tern	7
<i>Thalasseus bengalensis</i>	Lesser Crested Tern	37
<i>Thalasseus sandvicensis</i>	Sandwich Tern	3,180
<i>Thalasseus maximus</i>	Royal Tern	1,222
<i>Pandion haliaetus</i>	Osprey	53
<i>Circus aeruginosus</i>	Western Marsh-harrier	24
<i>Haliaeetus vocifer</i>	African Fish-eagle	3
<i>Corythornis cristatus</i>	Malachite Kingfisher	6
<i>Alcedo atthis</i>	Common Kingfisher	136
<i>Halcyon malimbica</i>	Blue-breasted Kingfisher	11

20. Guinée-Bissau



Denombrement International des Oiseaux D'Eau (DIOE), Comptage Global 2020 en Guinee-Bissau

Joazinho SA¹, Hamilton B. Monteiro², Aissa Regalla de Barros².

¹Gabinete de Planificação Costeira (GPC)

²Instituto da Biodiversidade e das Áreas Protegidas (IBAP)



1. INTRODUCTION

Le dénombrement international des oiseaux d'eau est un exercice reconnu pour estimer les populations des oiseaux d'eau le long de la voie migratoire Est-Atlantique. La Guinée-Bissau a rejoint ce réseau des experts, et participe d'une manière active à cet événement. Pour répondre aux attentes internationales sur la contribution de

la Guinée-Bissau au DIOE, un atelier de formation a été organisé avant le début des décomptes en Janvier pour les membres de réseau de compteurs nationaux. L'objectif de cet atelier est de tester le niveau de connaissance des participants et de renforcer leurs capacités surtout sur la nouvelle méthode de comptage des limicoles et autres espèces des oiseaux d'eau. C'est dans ce contexte que la Guinée-Bissau a bénéficié d'appuis technique et financière auprès des partenaires bilatéraux et multilatéraux comme: Wetlands International, BirdLife International, Secrétariat de la Mer de Wadden (WSFI) et Fondation MAVA.

Au niveau interne, un appui a permis d'organiser la campagne dans deux grands sites (Littoral et Archipel Bijagos) par : la synergie du Bureau de la Planification Côtière (GPC), l'Institut de la Biodiversité et des Aires Protégées (IBAP) et l'Organisation pour la Défense et Développement des Zones Humides. Le DIOE s'est déroulé du 14 au 22 Janvier 2020 en Guinée-Bissau.

La République de Guinée-Bissau est située sur la côte ouest africaine avec une superficie de 36 125 Km². Il est limité au nord par le Sénégal, à l'est et au sud par la Guinée-Conakry et à l'ouest par l'Océan Atlantique. Elle est formée d'une partie continentale, entaillée par plusieurs fleuves et des lagunes (ex : Lac Cufada, site RAMSAR) et une partie insulaire, l'Archipel des Bijagos.

- Le littoral de la Guinée-Bissau s'étend sur 450 km de côte environ. La structure de la côte est à la fois sableuse, rocheuse et vaseuse.

A cette façade maritime, il faut ajouter des centaines de kilomètre de réseau hydrographique composé de huit grands cours d'eau (le Cacheu, le Mansoa, le Quinhamel, le Geba, le Buba, le Tombali, le Cumbijan et le Cacine). Les îles adjacentes et les plans d'eau (lacs et lagunes) sont caractérisés par une importante diversité biologique et culturelle

- L'Archipel des Bijagos est constitué de 88 îles et îlots, dont 22 sont habités et le reste inhabité mais cultivé selon les saisons. Cette zone est caractérisée par une profondeur inférieure à 10 m. L'existence des vasières (sableuse et/ou vaseuse), de canaux de faible profondeur, et de différents courants jouent un rôle significatif dans la richesse et la biodiversité du milieu. Cet archipel a été Classée réserve de biosphère par l'UNESCO en 1996 dans le cadre du programme MAB et site Ramsar depuis 2014.

2. METHODOLOGIE

Les méthodes utilisées dans les deux grandes zones humides (zone littorale et Archipel des Bijagós) sont celles du dénombrement direct des oiseaux d'eau :

- Les oiseaux sont comptés dans les habitats-types principaux (habitat) qui peuvent être identifiés sur les cartes d'habitat (plans de sol) de la zone de palétuvier, vasières et lacs dans la zone côtière de la Guinée-Bissau, à travers des polygones. Dans certains polygones on a les points pour les limicoles et leur surface exacte sont déterminés;

- L'ensemble des zones de couverture en Guinée-Bissau est supervisé, comme indiqué dans les cartes;
- Pour couvrir 108 polygones, les comptages sont effectués au même période simultanément dans les deux grandes zones (Littoral et Archipel Bijagos) pendant 8 à 9 jours.
- Dans le littoral, 3 groupes de 12 techniciens dont 9 nationaux et 3 étrangers ont participé aux décomptes.
- Dans l'Archipel Bijagos, 3 équipes de 13 techniciens dont 3 étrangers et 10 nationaux ont participé aux décomptes pendant 9 jours, plus deux jours de voyages.
- Les comptages sont effectués par vedette et à pied, et le repérage des unités de comptages a été facilité par le logiciel « Locus Maps ».
- Le décompte des oiseaux est effectué à marée basse et les zones appropriés pour la comptage sont: la zone intertidale, la ligne d'eau, les petits cours d'eau entre les bancs de sables et les vasières.
- Un seul décompte par site de comptage est effectué durant les marées basses.
- Les travaux ne sont pas seulement limités à compter les oiseaux, mais aussi à recueillir des informations sur les sites: autres espèces animales, la flore, les ressources halieutiques, les activités anthropiques, les menaces, etc.
- Tous les chefs d'équipes ont rempli les fiches décompte et les fiches environnementales, par les informations collectés dans chaque site.

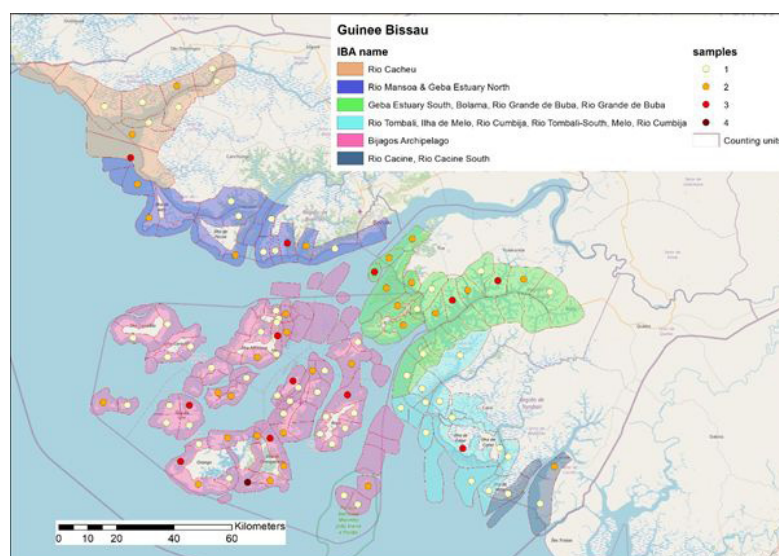


Figure 1: Les différents sites principaux (IBAs), les unités de comptage (counting units) et les numéro des sample des comptage (samples)

Autres institutions, organisations ou associations impliquées

- **ACMU** – Aire Communautaire de Mata (Forêt) d'Uco.
- **DGFF** – Direction Général des Forêts et Faune ;
- **DJOTCHETCHENGLAR** – Association de la Communauté Locale Dapak, ile de Jeta ;
- **ODZH** – Organisation pour le Défense et Développement des Zones Humides en Guinée-Bissau ;
- **SEAB** – Secrétairerie d'Etat d'Environnement et Biodiversité ;
- **Université Aveiro Portugal**

3. RESULTATS

Les espèces les plus importants en termes de nombre d'individus sont: *Sterna hirundo*, *Limosa lapponica*, *Calidris ferruginea* et *Chlidonia niger* (tableau 1).

4. DISCUSION

Difficultés rencontrées, qualité de couverture du dénombrement

- Les plus grandes difficultés étaient liées aux questions logistiques (problèmes avec les embarcations dans certaines zones).
- Il est nécessaire de redéfinir certains polygones (unité de comptage), qui sont impossibles de couvrir de l'inaccessibilité.
- La nouvelle méthodologie de dénombrement utilisée est encore mal comprise et doit être mieux expliquée, surtout dans le cas de site particulier comme les Bijagós.
- A cause de l'éloignement entre les sites, l'effet de la marée peut-être un facteur limitant pour couvrir le maximum de sites avant tombée de la nuit ;
- Instruments de dénombrement (jumelles et télescopes) de très faible qualité pour les techniciens nationaux.
- Points d'amélioration et d'apprentissage
- Améliorer la connaissance du terrain ;
- Systématiser les comptages dans les mêmes polygones et les mêmes tracés;
- Renforcer tous les coordonnateurs des sites, avec des interprétations de la cartographie des polygones à travers des équipements disponibles (GPS, Tablet, Cellulaire, etc.).
- Revoir les couts liées à la logistique, mise a disposition des embarcations.
- Améliorer la connaissance des techniciens

nationaux sur la méthodologie utilisée pour extrapoler les données de la Guinée-Bissau.

Conclusions et recommandations

Ce rapport sera complété avec les extrapolations qui seront effectuées par les experts partenaires pour déterminer, surtout les effectifs des limicoles présents dans les sites décomptés. Au regard des résultats et des contraintes, il est important de rechercher toujours plus de rigueur pour obtenir plus de fiabilité des données. C'est dans cette préoccupation que la participation des experts européens joue un rôle très important pour aider à corriger certaines anomalies liées au dénombrement. Au terme du DIOE, les résultats ont confirmé l'importance des nouveaux sites, surtout au niveau du littorale, pour les oiseaux migrateurs paléarctiques. Connaître l'occurrence des oiseaux dans les sites sélectionnés est nécessaire pour promouvoir les dénombrements mensuels ; Le renforcement des capacités du réseau de compteurs nationaux est nécessaire ; et pour cela il faut équiper les membres avec les moyens et instruments pour le dénombrement des oiseaux.

Remerciements

Cette campagne de dénombrement des oiseaux d'eau a été financée par la Fondation MAVA, Wadden Sea Flyway Initiative, avec l'appui technique et logistique du Bureau Wetlands International Africa, du Bureau de la Planification Côtière, de l'Institut de la Biodiversité et des Aires Protégées (IBAP) et de l'Organisation pour le Défense et Développement des Zones Humides, que nous remercions. Remerciement spécial à IBAP qui a mis à disposition la logistique et à cofinancé le DIOE.

ANNEX

Listes de compteurs/observateurs

Afonso Rocha, Agostinho Infanda, Aissa Regalla de Barros - chef d'équipe, Ana Coelho, Antonio Pires, Braima S. Vieira, Calustre Mendes, Carlitos Francisco Sedja, Fernando Preto, Fernando Tamizo, Hamilton Monteiro - chef d'équipe, Joãozinho Sá - chef d'équipe, Joost Valkenburg, Joost van Bruggen, Junior Domingos Alves, Marcelino Fernandes, Menno Hornman, Michiel van der Weide, Nelson Gomes, Quintino Tchanchalam - chefe d'équipe, Santinho Joaquim da Silva, Thijs Valkenburg, Tomé Mereck, William Intipe, Zeca Djú - chefe d'équipe.

Scientific name	French name	Total 2020
<i>Dendrocygna viduata</i>	Dendrocygne veuf	32
<i>Alopochen aegyptiaca</i>	Ouette d'Égypte	12
<i>Plectropterus gambensis</i>	Oie-armée de Gambie	12
<i>Phoenicopterus roseus</i>	Flamant rose	418
<i>Phoeniconaias minor</i>	Flamant nain	2
<i>Mycteria ibis</i>	Tantale ibis	109
<i>Ciconia microscelis</i>	Cigogne épiscopale	2
<i>Platalea alba</i>	Spatule d'Afrique	1,367
<i>Platalea leucorodia</i>	Spatule blanche	3
<i>Threskiornis aethiopicus</i>	Ibis sacré	1,651
<i>Bostrychia hagedash</i>	Ibis hagedash	36
<i>Plegadis falcinellus</i>	Ibis falcinelle	35
<i>Nycticorax nycticorax</i>	Bihoreau gris	41
<i>Butorides striata</i>	Héron strié	17
<i>Ardeola ralloides</i>	Crabier chevelu	65
<i>Bubulcus ibis</i>	Héron garde-boeufs	556
<i>Ardea cinerea</i>	Héron cendré	704
<i>Ardea melanocephala</i>	Héron mélanocéphale	2
<i>Ardea goliath</i>	Héron goliath	145
<i>Ardea alba</i>	Grande Aigrette	959
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	33
<i>Egretta ardesiaca</i>	Aigrette ardoisée	1,149
<i>Egretta garzetta</i>	Aigrette garzette	199
<i>Egretta gularis</i>	Aigrette à gorge blanche	2,870
<i>Scopus umbretta</i>	Ombrette africaine	3
<i>Pelecanus rufescens</i>	Pélican gris	3,541
<i>Pelecanus onocrotalus</i>	Pélican blanc	104
<i>Microcarbo africanus</i>	Cormoran africain	1,534
<i>Phalacrocorax carbo</i>	Grand Cormoran	349
<i>Anhinga rufa</i>	Anhinga d'Afrique	196
<i>Burhinus senegalensis</i>	Oedicnème du Sénégal	18
<i>Haematopus ostralegus</i>	Huîtrier pie	913
<i>Recurvirostra avosetta</i>	Avocette élégante	115
<i>Himantopus himantopus</i>	Échasse blanche	5
<i>Pluvialis squatarola</i>	Pluvier argenté	2,913
<i>Charadrius hiaticula</i>	Pluvier grand-gravelot	4,275
<i>Charadrius marginatus</i>	Pluvier à front blanc	99
<i>Charadrius alexandrinus</i>	Pluvier à collier interrompu	286

Scientific name	French name	Total 2020
<i>Vanellus spinosus</i>	Vanneau à éperons	42
<i>Vanellus senegallus</i>	Vanneau du Sénégal	4
<i>Numenius phaeopus</i>	Courlis corlieu	7,974
<i>Numenius arquata</i>	Courlis cendré	1,312
<i>Limosa lapponica</i>	Barge rousse	11,919
<i>Arenaria interpres</i>	Tournepipe à collier	607
<i>Calidris canutus</i>	Bécasseau maubèche	3,067
<i>Calidris ferruginea</i>	Bécasseau cocorli	11,945
<i>Calidris alba</i>	Bécasseau sanderling	4,802
<i>Calidris alpina</i>	Bécasseau variable	10
<i>Calidris minuta</i>	Bécasseau minute	51
<i>Actitis hypoleucos</i>	Chevalier guignette	1,540
<i>Tringa erythropus</i>	Chevalier arlequin	5
<i>Tringa nebularia</i>	Chevalier aboyeur	563
<i>Tringa totanus</i>	Chevalier gambette	4,344
<i>Tringa stagnatilis</i>	Chevalier stagnatile	1
<i>Glareola pratincola</i>	Glaréole à collier	5
<i>Larus genei</i>	Goéland railleur	793
<i>Larus cirrocephalus</i>	Mouette à tête grise	646
<i>Larus dominicanus</i>	Goéland dominicain	13
<i>Larus fuscus</i>	Goéland brun	13
<i>Sternula albifrons</i>	Sterne naine	3,165
<i>Gelochelidon nilotica</i>	Sterne hansel	2,201
<i>Hydroprogne caspia</i>	Sterne caspienne	6,653
<i>Chlidonias niger</i>	Guifette noire	5,659
<i>Sterna dougallii</i>	Sterne de Dougall	2
<i>Sterna hirundo</i>	Sterne pierregarin	6,330
<i>Thalasseus bengalensis</i>	Sterne voyageuse	619
<i>Thalasseus sandvicensis</i>	Sterne caugek	4,351
<i>Thalasseus maximus</i>	Sterne royale	2,663
<i>Pandion haliaetus</i>	Balbusard pêcheur	369
<i>Gypohierax angolensis</i>	Palmiste africain	1,221
<i>Circus aeruginosus</i>	Busard des roseaux	6
<i>Haliaeetus vocifer</i>	Pygargue vocifer	116
<i>Corythornis cristatus</i>	Martin-pêcheur huppé	1
<i>Megaceryle maxima</i>	Martin-pêcheur géant	2
<i>Ceryle rudis</i>	Martin-pêcheur pie	108
<i>Halcyon malimbica</i>	Martin-chasseur à poitrine bleue	11

21. Guinee



RAPPORT DU DENOMBREMENT DES OISEAUX D'EAU, REPUBLIQUE DE GUINEE. Du 27 Janvier au 10 Février 2020

Mohamed Balla Moussa CONDE,
Direction des Eaux et Forêts,
Republique de Guinee



1. INTRODUCTION :

La République de Guinée en collaboration avec Wetlands International organise chaque année le comptage annuel des oiseaux d'eau. Pendant l'hiver ces oiseaux sont accueilli par des concentrations des oiseaux migrateurs sur tout le long des côtes de l'Afrique ouest. Pour beaucoup de ces oiseaux, un réseau de sites d'importance vitale le

long de la voie de migration leur est essentiel pour poursuivre leur migration. Pour le cas particulier de la Guinée il y a cela plus de 20 ans, il y avait des sites côtiers qui n'avait pas fait l'objet de comptage et cette année ils ont été touché c'est-à-dire de la frontière de Sierra Leone jusqu'à la frontière de Guinée Bissau, qu'on appelle communément le grand comptage.

Objectif :

L'objectif principal du DIOE en Janvier 2020 est le comptage des oiseaux d'eau dans les principaux sites de dénombrement en République de Guinée situés le long de la voie de migration Est-Atlantique.

2. METHODE

En République de Guinée compte tenu de l'accessibilité des sites côtiers et les distances qui les sépare en fonction du programme de la marée. Nous avons commencé le travail au Sud de la Guinée Vers la Sierra Leone et remonté vers le Nord à la frontière de Guinée Bissau et terminé par la zone spéciale de Conakry et environ. Avec l'appui des personnes Hollandais, ils ont divisé tout le long de la côte guinéenne en des petites cellules (unités de comptage) avec des coordonnées et des codes pour faciliter le travail. Tout ceci à l'aide du logiciel LocusMap, qu'on a introduit dans les tablettes et dans les téléphones androïdes des compteurs.

Dans la zone de Toguiro, la plaine de Monchon, la plaine et vasière de Koba les deux équipes ont

utilisé les Véhicules comme moyen de transport, quant aux autres sites restants nous avons utilisé les embarcations motorisés et à pied au niveau des vasières et des plages. Chaque unité de comptage avait sa liste de points de comptage par jour et en fonction du nombre de points de comptage visité par l'équipe cela pouvait varier. Les 95% du temps de travail s'est passé en camping afin d'avoir beaucoup plus information sur les sites ZICO et les sites qui ne sont pas des ZICO. Pour chaque site nous avons fait le comptage réel afin de faciliter l'estimation et la densité par espèce. Nous avons effectué pour chaque site le remplissage des fiches de suivi ZICO afin d'avoir des informations sur les oiseaux et leur habitat.

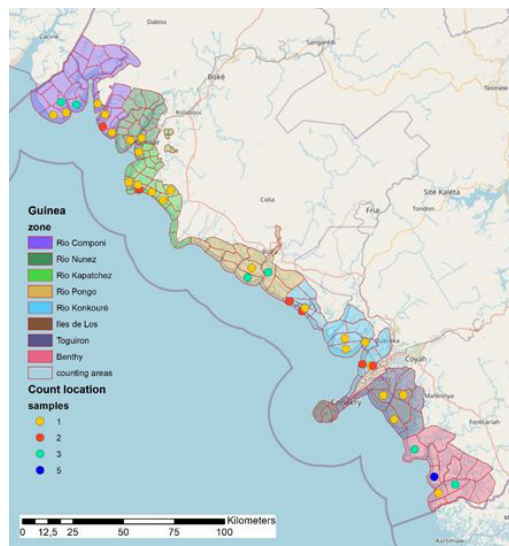


Figure 1: La côte de la Guinée avec les différents sites majeurs ('zone') et les unités de comptage ('counting areas') et les numéros des échantillons de comptage ('samples').

3. RESULTATS :

Au terme des travaux de comptage allant de la période du 27 janvier au 10 février 2020, nous avons dénombré 72 espèces d'oiseaux d'eau sur un total de nombre d'individus de 51, 701 répartis sur 55 échantillons de comptage.

4. DISCUSSION

Les fiches environnementales nous ont permis d'évaluer la qualité des sites visités, les menaces qui s'y présentent et les mesures de conservation prises. A Benty, la surexploitation des mollusques et crustacés ; l'exploitation forestière et la collecte de bois de feu ; ainsi que la pollution (problèmes par les eaux usées urbaines) sont les activités humaines qui menacent le site. Aussi la pression de chasse sur les oiseaux d'eau reste un problème

majeur. Malgré quelques réglementations, le site n'est pas protégé et nécessite des mesures de conservation. Au Delta de Konkouré, les activités humaines sont moins accentuées qu'à Benty. Cependant des activités comme la surpêche ; la coupe et la collecte de bois de feu ; la pollution (eaux usées et déchets plastiques) et le changement climatique constituent des menaces. Bien que le site soit reconnu au niveau national et international, les mesures de conservation restent limitées. A Kapatchez, l'activité humaine est très intense et diversifiée. Il y a beaucoup de zones agricoles, mais l'exploitation est modérée. Aussi la pêche, le trafic maritime et la pollution (pas de latrine moderne) sont très accentués et impactent négativement sur l'environnement. Malgré son statut de protection, les mesures environnementales sont rarement respectées. Nunez, Ile Tristao/ Rio Komponi et Rio Pongo sont moins marqués par les activités anthropiques ; néanmoins ils ont aussi un problème de pollution urbaine. Si ce n'est pas corrigé à temps, cela pourrait créer dans l'avenir de réelles menaces sur l'environnement. A Toguiro, une partie non négligeable est occupée par des habitations ou des fermes agricoles. Les autres activités humaines sont comparables à celles du Delta de Konkouré.

Recommandation :

Nous recommandons l'obtention de certain équipement auprès des bailleurs de fonds tels que :

- Matériel de Camping,
- Appareils photo numérique professionnel,
- Appareils optiques pour le travail (jumelles, télescopes),
- Guides d'identification des oiseaux,
- Faire la formation sur la technique d'identification et de suivi des agents de conservation des différents sites de conservation,
- Obtention des fonds de l'Etat afin d'appuyer le comptage en Guinée,
- Aide des bailleurs pour l'obtention d'une vedette pour la Guinée,
- Autonomisation de la gestion financière pour éviter la surfacturation par les acteurs quand il constate la présence d'un expert européen.

ANNEX

Liste des compteurs

Mohamed Balla Moussa CONDE, Marc van Rooijen, Erik van Winden, Aissatou Yvette DIALLO, Kadiatou SOUMAH, Ibrahima Sory CONTE, Cecile GUILAVOGUI

Tableau 1: Résultats du décompte sur les effectifs obtenus en comptage direct.

Scientific name	French name	Total 2020	Scientific name	French name	Total 2020
<i>Dendrocygna viduata</i>	Dendrocygne veuf	565	<i>Numenius arquata</i>	Courlis cendré	187
<i>Spatula clypeata</i>	Canard souchet	1	<i>Limosa lapponica</i>	Barge rousse	3,321
<i>Phoenicopterus roseus</i>	Flamant rose	45	<i>Arenaria interpres</i>	Tournepieuvre à collier	116
<i>Phoeniconaias minor</i>	Flamant nain	3,201	<i>Calidris canutus</i>	Bécasseau maubèche	174
<i>Mycteria ibis</i>	Tantale ibis	79	<i>Calidris ferruginea</i>	Bécasseau cocorli	4,547
<i>Ciconia microscelis</i>	Cigogne épiscopale	6	<i>Calidris alba</i>	Bécasseau sanderling	1,583
<i>Platalea alba</i>	Spatule d'Afrique	103	<i>Calidris minuta</i>	Bécasseau minute	401
<i>Threskiornis aethiopicus</i>	Ibis sacré	149	<i>Actitis hypoleucos</i>	Chevalier guigrette	947
<i>Butorides striata</i>	Héron strié	46	<i>Tringa ochropus</i>	Chevalier cul-blanc	4
<i>Ardeola ralloides</i>	Crabier chevelu	24	<i>Tringa nebularia</i>	Chevalier aboyeur	448
<i>Bubulcus ibis</i>	Héron garde-boeufs	302	<i>Tringa totanus</i>	Chevalier gambette	3,403
<i>Ardea cinerea</i>	Héron cendré	657	<i>Tringa glareola</i>	Chevalier sylvain	13
<i>Ardea melanocephala</i>	Héron mélanocéphale	6	<i>Tringa stagnatilis</i>	Chevalier stagnatile	5
<i>Ardea goliath</i>	Héron goliath	13	<i>Glareola pratincola</i>	Glaréole à collier	3,237
<i>Ardea purpurea</i>	Héron pourpré	3	<i>Rynchops flavirostris</i>	Bec-en-ciseaux d'Afrique	2
<i>Ardea alba</i>	Grande Aigrette	804	<i>Larus genei</i>	Goéland railleur	13
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	30	<i>Larus cirrocephalus</i>	Mouette à tête grise	423
<i>Egretta ardesiaca</i>	Aigrette ardoisée	385	<i>Larus fuscus</i>	Goéland brun	3
<i>Egretta garzetta</i>	Aigrette garzette	764	<i>Sternula albifrons</i>	Sterne naine	1,693
<i>Egretta gularis</i>	Aigrette à gorge blanche	412	<i>Gelochelidon nilotica</i>	Sterne hansel	1,881
<i>Scopus umbretta</i>	Ombrette africaine	3	<i>Hydroprogne caspia</i>	Sterne caspienne	202
<i>Pelecanus rufescens</i>	Pélican gris	342	<i>Chlidonias leucopterus</i>	Guifette leucoptère	2
<i>Microcarbo africanus</i>	Cormoran africain	208	<i>Chlidonias niger</i>	Guifette noire	777
<i>Anhinga rufa</i>	Anhinga d'Afrique	2	<i>Sterna hirundo</i>	Sterne pierregarin	308
<i>Burhinus senegalensis</i>	Oedicnème du Sénégal	30	<i>Thalasseus bengalensis</i>	Sterne voyageuse	40
<i>Haematopus ostralegus</i>	Huîtrier pie	243	<i>Thalasseus sandvicensis</i>	Sterne caugek	1,617
<i>Recurvirostra avosetta</i>	Avocette élégante	2,203	<i>Thalasseus maximus</i>	Sterne royale	4,256
<i>Himantopus himantopus</i>	Échasse blanche	173	<i>Pandion haliaetus</i>	Balbuzard pêcheur	46
<i>Pluvialis squatarola</i>	Pluvier argenté	1,306	<i>Gypohierax angolensis</i>	Palmiste africain	89
<i>Charadrius hiaticula</i>	Pluvier grand-gravelot	4,533	<i>Circus aeruginosus</i>	Busard des roseaux	5
<i>Charadrius dubius</i>	Pluvier petit-gravelot	1	<i>Haliaeetus vocifer</i>	Pygargue vocifer	9
<i>Charadrius marginatus</i>	Pluvier à front blanc	82	<i>Corythornis cristatus</i>	Martin-pêcheur huppé	15
<i>Charadrius alexandrinus</i>	Pluvier à collier interrompu	16	<i>Megaceryle maxima</i>	Martin-pêcheur géant	2
<i>Vanellus spinosus</i>	Vanneau à éperons	26	<i>Ceryle rudis</i>	Martin-pêcheur pie	80
<i>Vanellus senegallus</i>	Vanneau du Sénégal	15	<i>Halcyon malimbica</i>	Martin-chasseur à poitrine bleue	9
<i>Actophilornis africanus</i>	Jacana à poitrine dorée	38			
<i>Numenius phaeopus</i>	Courlis corlieu	5,027			

Hommage à Mohamed Balla Moussa CONDE

Très tristement, Mohamed Balla Moussa CONDE est décédé quelques mois après le DIOE en Guinée à cause d'une maladie.

Mohamed Balla Moussa CONDE est une personne cordiale, dynamique, passionnée par les oiseaux et la conservation. Il manquera beaucoup à sa famille, à ses amis et au réseau des conservateurs en Guinée et ailleurs. Nos pensées et nos prières sont avec lui maintenant.



Balla Moussa Conde

Photo: B. van Gernerden

22. Sierra Leone



International Waterbirds Census (IWC) total count 2020 in Sierra Leone

Papanie Bai-Sesay, Andrea Haffner,
Charles Showers
Conservation Society Sierra Leone



1. INTRODUCTION

Sierra Leone's coast is approximately 350 km long and coastal wetlands cover approximately 5–6,000 km². There are diverse types of coastal wetland habitats ranging from estuaries, lakes, shallow water, mangroves, lagoons to rivers. The coastal zone has four main estuary systems, namely: the Scarcies Estuary, Sierra Leone River Estuary, Yawri Bay and Sherbro Islands. Besides these four, also Turtle Islands is important and to a lesser extent

the Western Peninsula (van der Winden et al. 2008). Every year, Conservation Society of Sierra Leone (CSSL) undertakes monitoring by counting of waterbirds and assessment of environmental factors. The first comprehensive total count of waterbirds of the coast of Sierra Leone was carried out in 2005 (van der Winden et al. 2008). Since 2013 yearly counts are taken place in a sample of counting units, in 2014 and 2017 larger parts of the estuaries have been covered.

As coverage was still rather low, Conservation Society of Sierra Leone with funding from Wadden Sea Flyway Initiative (WSFI), Wetlands International and Birdlife International and the help of four extra counters from abroad, conducted a waterbird census of coastal wetlands in the period January–February 2020. This chapter gives the preliminary results from this census.

Objectives

- To count all waterbirds along Sierra Leone's entire coastline as a part of consistent monitoring of the status of the birds and the wetland ecosystem
- To assess the current status of the coastal wetlands, taking stock of pressures threats and conservation measures.

2. METHODS

The Republic of Sierra Leone is a relatively small country (73,326 sq. km) located on the West Coast

of Africa. The Republic of Guinea is to the north and northeast; Liberia is to the east and southeast, and the Atlantic Ocean to the west and south. Prior to the counts a map with counting units had been prepared based on the transects identified in 2005. The transects were upgraded into units (polygons) and digitalised in GIS in 2019. The counting units had been supplied in a format to be used on smart phones (Maps.me or Locus map). Additionally hardcopies of these units were available as back up to be used in the field. At each main site, the teams discussed which counting units should be the most important to cover (Figure 1). The 2005 results were leading in this as well as fuel and lodging possibilities.

The estuaries visited were counted by using small outboard engine boats. All areas were counted during low tide when waterbirds were present on mudflats, sandbanks and banks of rivers. Counting ended before high tide as waterbirds hide in mangroves or gather on inland plains. Most effective was sailing along mudflat shores and counting from the boat. Whenever large mudflats occurred, counts were executed by foot. In some areas, it was possible to walk stretches, in other areas regular drop offs by boats to the mudflat shore were necessary to execute the counts. Important mudflat areas and large sandbanks were always visited during low tide periods. The project focused on marine coastal habitats such as mudflats, sandbanks, shores and inshore open waters. Birds of more offshore open waters (terns) were counted at coastal day roosts. Terns feeding inshore (close to the coast) were included in the "land" counting unit. Circling storks and raptors were included in the specific counting unit. Inland habitats such as floodplains and rice fields were only counted if bordering creeks, coasts or rivers. During such counts, the team did not leave the boat, but counted water birds in open areas up to 200- 300 m from the shore, resulting in a strong bias towards larger birds such as herons and storks. Creeks in mangrove forests were counted from the boat and in such cases only the banks were covered. All traditionally known waterbird species, (ducks, pelicans, cormorants, herons, spoonbills, flamingos, storks, rails, waders, gulls, terns, skuas), were included in the counts as well as some additional groups such as raptors associated with wetlands (Palm-nut Vulture, Osprey and Yellow-billed Kite) and Kingfishers. White-faced Whistling Ducks were included in the counts although they do not use the counting units as feeding habitat. The coastal wetlands are partly used by the ducks as day-time roosts.

3. RESULTS

A total of 55,906 birds of 60 waterbird species was counted during the 2020 waterbird survey (table 1). The five major marine areas in the country were covered at least for over 50%. Full analysis of the results would be done later by us and in the framework of flyway reporting.



Figure 1 Overview of main sites, counting units and count coverage in 2020

4. DISCUSSION

Sierra Leone has a large shorelines with extensive mudflats, sand banks and beaches that support lots of waterbirds, both wintering migratory species and resident African species. The vastness, tiny Island, sand banks, mudflat and rocky shores makes it difficult to count. Most of the areas should be covered by boat and good boats are expensive to hire and difficult to get. However, the team was able to cover important sites and counting was done in a coordinated manner.

Table 1 Totals counted per species

Scientific name	English name	Total 2020
<i>Dendrocygna viduata</i>	White-faced Whistling-duck	758
<i>Mycteria ibis</i>	Yellow-billed Stork	46
<i>Ciconia microscelis</i>	African Woollyneck	74
<i>Platalea alba</i>	African Spoonbill	114
<i>Threskiornis aethiopicus</i>	African Sacred Ibis	104
<i>Butorides striata</i>	Green-backed Heron	141
<i>Bubulcus ibis</i>	Cattle Egret	100
<i>Ardea cinerea</i>	Grey Heron	426
<i>Ardea melanocephala</i>	Black-headed Heron	10
<i>Ardea goliath</i>	Goliath Heron	3
<i>Ardea purpurea</i>	Purple Heron	1
<i>Ardea alba</i>	Great White Egret	566
<i>Ardea brachyrhyncha</i>	Yellow-billed Egret	40
<i>Egretta ardesiaca</i>	Black Heron	18
<i>Egretta garzetta</i>	Little Egret	376
<i>Egretta gularis</i>	Western Reef-egret	1,074
<i>Scopus umbretta</i>	Hamerkop	15
<i>Pelecanus rufescens</i>	Pink-backed Pelican	178
<i>Pelecanus onocrotalus</i>	Great White Pelican	64
<i>Microcarbo africanus</i>	Long-tailed Cormorant	400
<i>Burhinus senegalensis</i>	Senegal Thick-knee	20
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	63
<i>Recurvirostra avosetta</i>	Pied Avocet	495
<i>Pluvialis squatarola</i>	Grey Plover	4,391
<i>Charadrius hiaticula</i>	Common Ringed Plover	3,321
<i>Charadrius marginatus</i>	White-fronted Plover	1
<i>Vanellus senegallus</i>	Wattled Lapwing	10
<i>Numenius phaeopus</i>	Whimbrel	5,961
<i>Numenius arquata</i>	Eurasian Curlew	222
<i>Limosa lapponica</i>	Bar-tailed Godwit	3,337
<i>Limosa limosa</i>	Black-tailed Godwit	19

Scientific name	English name	Total 2020
<i>Arenaria interpres</i>	Ruddy Turnstone	353
<i>Calidris canutus</i>	Red Knot	973
<i>Calidris ferruginea</i>	Curlew Sandpiper	14,688
<i>Calidris alba</i>	Sanderling	686
<i>Calidris alpina</i>	Dunlin	1
<i>Actitis hypoleucos</i>	Common Sandpiper	1,348
<i>Tringa erythropus</i>	Spotted Redshank	1
<i>Tringa nebularia</i>	Common Greenshank	917
<i>Tringa totanus</i>	Common Redshank	3,565
<i>Tringa stagnatilis</i>	Marsh Sandpiper	3
<i>Rynchops flavirostris</i>	African Skimmer	1
<i>Larus cirrocephalus</i>	Grey-headed Gull	49
<i>Larus fuscus</i>	Lesser Black-backed Gull	6
<i>Sternula albifrons</i>	Little Tern	1,017
<i>Gelochelidon nilotica</i>	Common Gull-billed Tern	351
<i>Hydroprogne caspia</i>	Caspian Tern	30
<i>Chlidonias niger</i>	Black Tern	143
<i>Sterna hirundo</i>	Common Tern	1,281
<i>Thalasseus bengalensis</i>	Lesser Crested Tern	92
<i>Thalasseus sandvicensis</i>	Sandwich Tern	1,733
<i>Thalasseus maximus</i>	Royal Tern	5,955
<i>Pandion haliaetus</i>	Osprey	36
<i>Gypohierax angolensis</i>	Palm-nut Vulture	143
<i>Circus aeruginosus</i>	Western Marsh-harrier	3
<i>Haliaeetus vocifer</i>	African Fish-eagle	4
<i>Corythornis cristatus</i>	Malachite Kingfisher	30
<i>Megaceryle maxima</i>	Giant Kingfisher	3
<i>Ceryle rudis</i>	Pied Kingfisher	134
<i>Halcyon malimbica</i>	Blue-breasted Kingfisher	12

Threats to sites

Climate change and Sea level rise

Sea level rise is causing shifts in the distribution of water birds in some important habitat in the Yawri Bay and the Sierra Leone River Estuary. Some banks were lost completely but others expanded.

Mangrove deforestation

Cutting of mangroves in most sites (especially at Scarcies and SLRE) destroys the habitat of the birds, reducing the roosting and foraging sites for birds. It also exposes the site to erosion and human interference hence creating food competition between human and birds at low tides for the collection of shellfishes.

Deposition of waste into the sea

Disposal of waste, especially plastic (especially at SLRE) in the sea causes pollution which affects the

birds in diverse ways. It is reducing the feeding grounds for the birds.

Hunting

This poses direct threat on the population of migratory birds, if serious mitigation measures are not taken, high profile birds and larger birds population would be reduced to very low percentage.

Improvements and learning points for the future

- Exhaustive preparation and alternative plans are required, especially regarding vehicle and boat hire
- We travelled too much costing too much fuel. It saves fuel to do not return to the same place to spend the night but move from estuary to estuary with the same boat.
- The local team needs more to take the lead in terms of decision taking.

- Start at Sherbro next time and spend more time here as no good survey of this area is available yet.

Acknowledgements

We would like to thank God almighty for given us the strength to carry out this wonderful exercise. We want also to thank Conservation Society of Sierra Leone for their technical support to us throughout the exercise, especially the biodiversity team.

ANNEX

List of counters (observers)

Charles Showers, Papanie Bai-Sesay, Andrea Haffner, Jesse Kanu, Jan van der Winden, Moses Luseni, Alhaji Siaka, Camilla Dreef, Kenneth Gbengba, Chas Holt, Richard Hearn

Tribute to Kenneth Gbengba by Charles Showers

It is with dismay that we have to announce the sudden death of Kenneth Gbengba, a professional and internationally renowned birder in Sierra Leone who was an important participant during the 2020 waterbird count. He passed away in August. I met Kenneth at the Conservation Society of Sierra Leone in 2005 when he eagerly wanted to register the first ever bird watching tour company in Sierra Leone. After spending some time in Senegal and the Gambia as a tour guide, he thought of establishing his own tour company in his home country, Sierra Leone. He decided to call it 'fact finding birding tours'. I will remember him as a guy who mastered West African birds to his fingertips. He did mentor young Sierra Leoneans in birding, took many of us to special birds in the country and helped during waterbird surveys in 2005 and 2020. He will be sadly missed both nationally and internationally. May his soul rest in perfect peace.



23. Liberia



INTERNATIONAL WATER- BIRDS CENSUS (IWC) TOTAL COUNT 2020 IN LIBERIA

Jerry C. Garteh,
Country Coordinator,
Society for the Conservation of
Nature in Liberia



1. INTRODUCTION

The Society for the Conservation of Nature of Liberia in collaboration with Wetlands International conduct census as part of the global information sharing on biodiversity. This report represents the 2020 waterbirds census conducted from January 5th to 18th 2020 along three coastal landscapes in Liberia: Grand Cape Mount, Montserrado and Margibi specifically in Robertsport, Monrovia, and Marshall Cities respectively. Unlike past census, this year census was conducted in five parent

sites; Lake Piso, Marshall Wetlands, Monrovia Coastal Lagoon, Mesurado Wetlands and Lofa River Mouth (Figure 1).

2. METHODOLOGY

Over the year SCNL has been collaborating with other institutions in supporting environmental and biodiversity protection in these above Ramsar sites in Liberia. SCNL has worked with the Environmental Protection Agency in making sure that sites that are not under full protection like the Lake Piso be protected under the Ramsar agreement. In this year International Waterbirds Census, the Forestry Development Authority (FDA) and the Piso Conservation Forum (PCF) were involved in this year count. The census was conducted by four individual led by the National Coordinator, one Site Support Group members from Piso Conservation Forum, a Volunteer from the University of Liberia and one from the Forestry Development Authority. The purpose of the census was to monitor the numerical size of waterbird populations and highlight the threats and environmental conditions of the flyway zone.

The methods used to conduct the census are based on the 2010 Wetlands International field protocol for waterbirds counting.

- Large site was divided into smaller counting units.
- Sites were surveyed by foot or use boats based on the minimum accessible means.

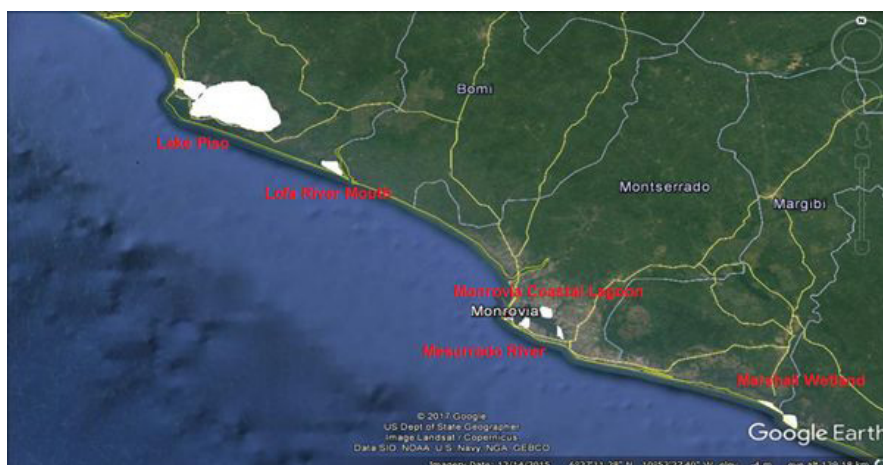


Figure 1: Map of the sites in white and names in red

- Each site was visited based on local information on when birds are available.
- Monitors move in pair to confirm the identity of species they encountered and recorded species information and environmental condition on the spot.
- IBA forms and count forms were filled immediately at the end of count unit.

3. RESULTS

A total of 929 individual birds were encountered (Table 1)

4. DISCUSSION

The unique to all sites was fishing, though, encroachment, hunting, garbage disposal and urban development were all threats recorded. Threats in these sites are anthropogenic. Population

increased has led to encroachment of sites, pollution plastic waste and the conversion of sites for dwellings.

Challenges

Access to most of these sites seem difficult as routes are closed by people claiming personal entitlement. Sometimes if there are routes leading to the site, people don't want to allow us because they feel threatened by our presence. Residents around these wetlands sometimes want us to ask them in advance before we can access the counting sites.

Conclusions and recommendations

Except for Lake Piso which is a protected area and has some formal and legal protection, the rest of the sites depend on the Ramsar Convention for protection. In most of these sites you will see

Table 1: List of waterbird species and their numbers recorded

Scientific name	English name	Total 2020
<i>Dendrocygna viduata</i>	White-faced Whistling-duck	65
<i>Tachybaptus ruficollis</i>	Little Grebe	5
<i>Gallinula chloropus</i>	Common Moorhen	8
<i>Ciconia microscelis</i>	African Woollyneck	1
<i>Ardeola ralloides</i>	Squacco Heron	1
<i>Bubulcus ibis</i>	Cattle Egret	82
<i>Ardea cinerea</i>	Grey Heron	15
<i>Ardea melanocephala</i>	Black-headed Heron	12
<i>Ardea brachyrhyncha</i>	Yellow-billed Egret	21
<i>Egretta garzetta</i>	Little Egret	26
<i>Egretta gularis</i>	Western Reef-egret	89
<i>Microcarbo africanus</i>	Long-tailed Cormorant	73
<i>Burhinus vermiculatus</i>	Water Thick-knee	1
<i>Himantopus himantopus</i>	Black-winged Stilt	4

Scientific name	English name	Total 2020
<i>Pluvialis squatarola</i>	Grey Plover	1
<i>Numenius phaeopus</i>	Whimbrel	13
<i>Actitis hypoleucos</i>	Common Sandpiper	59
<i>Tringa nebularia</i>	Common Greenshank	15
<i>Sternula albifrons</i>	Little Tern	129
<i>Chlidonias niger</i>	Black Tern	8
<i>Sterna dougallii</i>	Roseate Tern	1
<i>Sterna hirundo</i>	Common Tern	105
<i>Thalasseus sandvicensis</i>	Sandwich Tern	61
<i>Thalasseus maximus</i>	Royal Tern	14
<i>Pandion haliaetus</i>	Osprey	5
<i>Gypohierax angolensis</i>	Palm-nut Vulture	26
<i>Corythornis cristatus</i>	Malachite Kingfisher	7
<i>Ceryle rudis</i>	Pied Kingfisher	25
<i>Halcyon malimbica</i>	Blue-breasted Kingfisher	9

visible sign post warning people not to encroach on the wetlands and that wetlands are not waste land. However, there is no sign of enforcement. The International Waterbirds Count is the only scientific activity that is taking place in these Ramsar sites. The count is just week's activity with a long coastline. Increasing the time and funding will provide opportunity to assess other potential sea bird areas like Upper Buchanan that is said to host more population of sea and wetland birds in Liberia. SCNL will want to recommend the following:

- Funding and census duration be increased to a least a month to assess many places that are earmarked.
- Wetland International support partners exchange visit to see how others are conducting the count.
- Wetland International holds responsible Government institutions accountable to make annual report on their Ramsar sites.
- That additional support be provided for awareness education for these sites

Acknowledgement

The waterbirds census would not have been possible without funding from Wetlands International, BirdLife International and the Wadden Sea Flyway Initiative. We also recognized the collaboration role played by the Society for the Conservation of Nature of Liberia (SCNL) in making sure that the census is possible in time and the fund is used for its intended purpose. We appreciate the dedicated efforts by the National Coordinator and his able staff for providing all of the necessary information from the sites.

ANNEX

List of Participants

Jerry Garteh, Hussan Pussah, Derick Paye, John Konie

24. Cote d'Ivoire



Rapport National du comptage des oiseaux d'eau 2020, Cote D'Ivoire

Lt KOUAME Kouassi Firmin
Direction de la Faune et des
Ressources Cynegetiques, Ministère des Eaux et Forêts, République de Cote d'Ivoire



1. INTRODUCTION

Située en Afrique de l'Ouest, la Côte-d'Ivoire s'étend sur 322 462 km². Le pays dispose de quatre grands bassins fluviaux (Comoé, Bandama, Sassandra et Cavally) qui couvrent 265 000 km² et est doté d'environ 500 km de littoral avec de nombreuses zones humides et plans d'eau indispensables pour les oiseaux d'eau le long de la

voie de migration. Le Dénombrement International d'Oiseaux d'Eau (DIOE), qui est un programme de suivi sur site des effectifs d'oiseaux d'eau, coordonné par Wetlands International et ses partenaires notamment, Wadden Sea Flyway Initiative (WSFI) et BirdLife International (BLI), se déroule chaque année avec la participation de plusieurs pays dont la Côte d'Ivoire.

Depuis les années 1990, la Côte d'Ivoire participe au DIOE. Cette activité est coordonnée dans le pays par la Direction de la Faune et des Ressources Cynégétiques (DFRC) du Ministère des Eaux et Forêts (MINEF). Cette année 2020, le DIOE a porté sur 15 sites et s'est déroulé, du 17 au 19 janvier 2020, grâce à la généreuse contribution financière de Wetlands International et de ses partenaires. Le comptage a mobilisé 10 équipes composées de 46 personnes dont des ornithologues, des agents techniques des Eaux et Forêts, des membres d'ONG et des volontaires. Les données collectées sur le terrain pendant le DIOE 2020, ont été traitées, compilées et analysées dans le présent rapport.

2. METHODOLOGIE

Le DIOE 2020 a couvert 15 sites parmi lesquels 07 sont côtiers, et s'est déroulé en deux (02) phases, une phase préparatoire et une phase pratique. La phase préparatoire a réuni les différents chefs d'équipes du DIOE janvier 2020, à la DFRC, le 14 janvier 2020. A cette réunion, le Point focal national de l'Accord sur la Conservation des Oiseaux

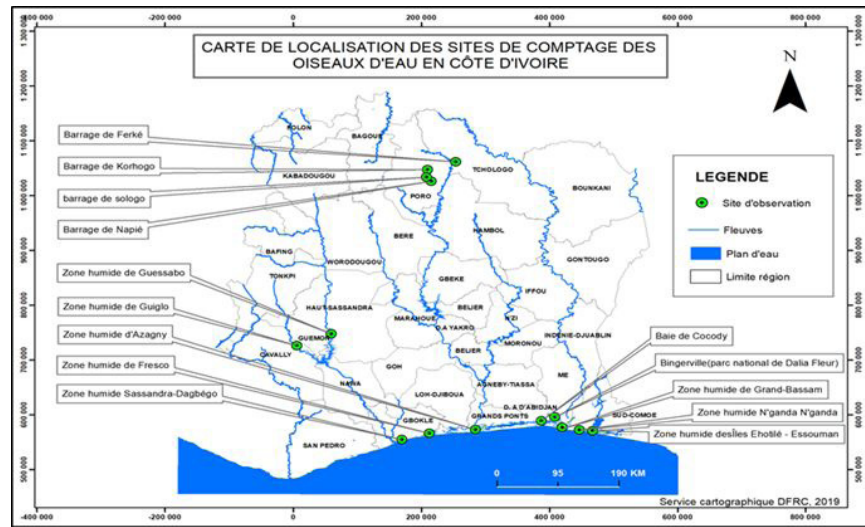


Figure 1: Carte de localisation des sites de comptage

d'Eau Migrateurs d'Afrique-Eurasie (AEWA) a présenté les objectifs du DIOE et a expliqué les méthodes et techniques de comptage des oiseaux. Concernant la phase pratique, les équipes ont été mises en mission du 17 au 19 janvier 2020 dans les sites concernés par le DIOE. Les observations sur certains sites ont été faites à bord de hors-bords et sur d'autres sites par des parcours pédestres. Le dénombrement est effectué tôt le matin quand la visibilité est bonne et l'après-midi à partir de 16 heures. Une fois sur le terrain, les équipes

choisissent un point de départ offrant une meilleure vue sur le plan d'eau. A partir de ce point de départ, les équipes parcourent le site à pied ou le plan d'eau en bateau motorisé. En plus du matériel d'observation habituel, les observateurs ont utilisé un drone. Ce qui a permis de compter et identifier les espèces d'oiseaux dans des endroits inaccessibles à l'homme.

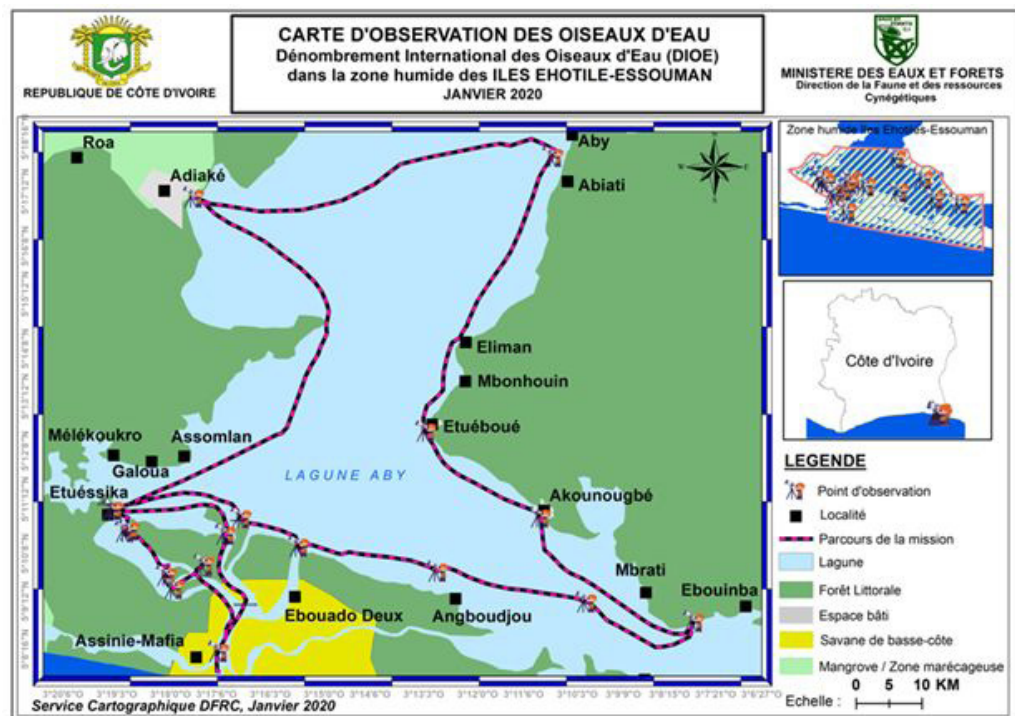


Figure 2: Carte d'observation des oiseaux d'eau

3. RESULTATS

A l'issue du comptage sur l'ensemble des sites retenus, 15 038 individus d'oiseaux d'eau de 60 espèces et 19 familles ont été observés, avec plus de 6000 individus de *Dendrocygna viduata* soit 40% par rapport à l'effectif total. Le plus grand effectif d'oiseaux d'eau a été observé dans le barrage de Soubré avec 4457 oiseaux d'eau. Quant au plus petit effectif, il a été observé dans le barrage de Napié avec 46 oiseaux d'eau. Les données ont montré que les sites non côtiers ont fourni un effectif de 8048 individus d'oiseaux, soit 54% d'oiseaux par rapport à l'effectif total contre 6990 oiseaux dans les sites côtiers, soit 46% d'oiseaux par l'effectif total (Tableau 1).

4. DISCUSSION

Le DIOE a révélé des menaces qui pèsent sur certains sites visités. Entre autre, la pollution due aux déchets, le braconnage, l'urbanisation.

- Pollution : Le site d'Abidjan (la baie du Banco et Bingerville), la zone humide de N'ganda-N'ganda et de Grand-Bassam sont généralement pollués par des déchets industriels et des déchets plastiques. Les espèces d'oiseaux d'eau vivant dans ces sites peuvent ingérer directement ou indirectement des morceaux de plastique, parce qu'ils les confondent avec de la nourriture ou parce qu'ils en avalent accidentellement, sous forme de morceaux plus petits, collés sur des algues ou déjà ingérés par leurs proies. Ces objets peuvent être dangereux pour ces oiseaux en provoquant un étouffement ou une intoxication.
- Braconnage : Dans la zone humide de N'ganda-N'ganda et Grand-Bassam les oiseaux d'eau sont sujets au braconnage utilisant soit des filets de pêche ou des fusils. Malgré la fermeture de la chasse et des mesures de protection de la faune prises en Côte-d'Ivoire, certaines personnes continuent de braconner les oiseaux d'eau sur ces sites.
- L'urbanisation : Le décapage dans le site d'Abidjan a un effet destructeur sur les espèces de faune qui s'y trouvent, notamment les oiseaux d'eau. Les nichoirs, repaires sont détruits mettant en péril la survie des oisillons et la réduction de la surface du site.

Le DIOE 2020 a permis de:

- Renforcer la collaboration entre les acteurs intervenant dans le suivi des oiseaux d'eau;
- Améliorer le réseau national de suivi des populations d'oiseaux d'eau ;

Tableau 1: Liste des espèces observées pendant le DIOE janvier 2020

Scientific name	French name	Total 2020
<i>Dendrocygna viduata</i>	Dendrocygne veuf	6,077
<i>Nettapus auritus</i>	Anserelle naine	211
<i>Tachybaptus ruficollis</i>	Grèbe castagneux	5
<i>Zapornia flavirostra</i>	Marouette à bec jaune	47
<i>Porphyrio alleni</i>	Talève d'Allen	13
<i>Gallinula chloropus</i>	Gallinule poule-d'eau	8
<i>Ciconia microscelis</i>	Cigogne épiscopale	22
<i>Bostrychia hagedash</i>	Ibis hagedash	5
<i>Nycticorax nycticorax</i>	Bihoreau gris	100
<i>Butorides striata</i>	Héron strié	98
<i>Ardeola ralloides</i>	Crabier chevelu	214
<i>Bubulcus ibis</i>	Héron garde-boeufs	1,918
<i>Ardea cinerea</i>	Héron cendré	60
<i>Ardea melanocephala</i>	Héron mélanocéphale	2
<i>Ardea goliath</i>	Héron goliath	3
<i>Ardea purpurea</i>	Héron pourpré	42
<i>Ardea alba</i>	Grande Aigrette	158
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	337
<i>Egretta ardesiaca</i>	Aigrette ardoisée	159
<i>Egretta garzetta</i>	Aigrette garzette	214
<i>Egretta gularis</i>	Aigrette à gorge blanche	121
<i>Scopus umbretta</i>	Ombrette africaine	11
<i>Microcarbo africanus</i>	Cormoran africain	625
<i>Anhinga rufa</i>	Anhinga d'Afrique	13
<i>Burhinus senegalensis</i>	Oedicnème du Sénégal	21
<i>Burhinus capensis</i>	Oedicnème tachard	1
<i>Himantopus himantopus</i>	Échasse blanche	19
<i>Charadrius hiaticula</i>	Pluvier grand-gravelot	4
<i>Charadrius alexandrinus</i>	Pluvier à collier interrompu	3
<i>Vanellus spinosus</i>	Vanneau à éperons	328
<i>Vanellus albiceps</i>	Vanneau à tête blanche	12
<i>Vanellus senegallus</i>	Vanneau du Sénégal	13
<i>Rostratula benghalensis</i>	Rhynchée peinte	6
<i>Actophilornis africanus</i>	Jacana à poitrine dorée	783
<i>Microparra capensis</i>	Jacana nain	74
<i>Numenius phaeopus</i>	Courlis corlieu	5
<i>Numenius arquata</i>	Courlis cendré	6
<i>Arenaria interpres</i>	Tournepieuvre à collier	8
<i>Calidris alba</i>	Bécasseau sanderling	40
<i>Actitis hypoleucos</i>	Chevalier guigrette	341
<i>Tringa ochropus</i>	Chevalier cul-blanc	58
<i>Tringa erythropus</i>	Chevalier arlequin	4
<i>Tringa nebularia</i>	Chevalier aboyeur	33
<i>Tringa glareola</i>	Chevalier sylvain	57
<i>Tringa stagnatilis</i>	Chevalier stagnatile	11
<i>Glareola nuchalis</i>	Glaréole auréolée	24
<i>Sternula albifrons</i>	Sterne naine	184
<i>Sterna hirundo</i>	Sterne pierregarin	205
<i>Thalasseus sandvicensis</i>	Sterne caugek	893
<i>Thalasseus maximus</i>	Sterne royale	1,393
<i>Pandion haliaetus</i>	Balbusard pêcheur	12
<i>Circus aeruginosus</i>	Busard des roseaux	4
<i>Haliaeetus vocifer</i>	Pygargue vocifer	2

- sensibiliser les populations riveraines des sites à oiseaux d'eau sur l'importance de conserver les oiseaux d'eau et leurs habitats ;
- Améliorer la collaboration avec des ONGs intervenant dans le secteur de la protection de l'environnement ;
- Visiter des sites à oiseaux qui ne sont pas régulièrement visités ;
- Accroître la capacité des participants en matière d'identification et de comptage d'oiseaux d'eau.

Recommandations

- Elaborer des modules de formation sur la conservation des oiseaux d'eau et de leurs habitats (zones humides) à l'endroit des élèves ;
- Poursuivre la sensibilisation des populations à la conservation des oiseaux d'eau et à la restauration des habitats dégradés à travers des ONGs, d'autres structures ou associations communautaires ;
- Accroître la collaboration entre les acteurs intervenant dans le domaine de la conservation de l'environnement (structures étatiques, structures privées, ONG...), plus particulièrement sur les axes prioritaires pour le suivi des oiseaux d'eau et des zones humides.

REMERCIEMENTS

La réalisation du DIOE 2020, a été rendu possible grâce à l'aide financière de Wetlands International et ses partenaires notamment Wadden Sea Flyway Initiative (WSFI), BirdLife International et l'appui technique de plusieurs structures et personnes physiques que nous tenons à remercier. Il s'agit des structures suivantes : les Directions Régionales des Eaux et Forêts de Korhogo, Soubré, Daloa et Guiglo ; l'Office Ivoirien des Parcs et Réserves (OIPR) ; la Société de Développement des Forêts (SODEFOR) ; l'Unité de Formation et de Recherche Biosciences de l'Université Félix Houphouët-Boigny d'Abidjan (UFR-Biosciences) ; les Universités Jean Lorougnon Guédé et Péléforo Gon Coulibaly ; les ONG Impactum, Green tide africa et SOS Forêt.

Notre gratitude va à l'endroit du Colonel Major TONDOSSAMA Adama, du Colonel Major SANGARE Mamadou, du Professeur YAOKOKORE Beibro, du Docteur AHON Dibié Bernard, du Docteur NIAMIEN Coffi Magloire. Pour avoir impliqué activement leur service, personnel, étudiants et moyens logistiques dans cette opération de dénombrement de janvier 2020. Nous tenons enfin à féliciter tous les ornithologues experts et apprentis, professionnels

et amateurs, tous les volontaires, qui ont bien voulu participer à ce comptage.

ANNEXE

Liste des compteurs (observateurs)

Tia Loua Samo Michel, Kouadio Damo Edmond, Sergent Dehi Dekado Prudence, Azia Djolokome Guy Ange, Kouame Kouassi Firmin, Gueye Monnoin Frederic, Youhouin Jean Frederic Oberlin, Touali Debaud Jocelin, Saraka Paulin, Nado Narcisse Gnegba Blaise, Yaokokore Beibro Hilaire, N'dri Yao Salomon, Mamadou Beno, Amededzi Kouakou Serge, Zrehon Weblegnon Michel, Niangoran Fernand Andre, Awa Gbocho Nicaise, Konan Yao Remy, Zausa Diorme, Abou Coulibaly, Assa Esse Savorgnan, Kouame Simeon Pierre, Yaouly Zou Bi Noel, Bamba Bakaranoko, Mahan Oliver, Ahon Dibié Bernard, Kouassi N'goran Yao Medard, Yapi Yapi Vanes, Sarambe Bogue Leontine, Zean Gnininte Maxime, Kouakou Kan Dieudonne, Die Nahin Philippe, Zago Hugues Martial, Koffi Yves Constant, Kadja Kacou Hilaire, Volker Salewski, Tiedoue Mahounin Roland, Amankou Kouao Francois, Sigui Abraham, Adoubi AchoJerome, Coulibaly, Toure Yacouba, Niamien Coffi Magloire, Konan Ekoun Michael, Konan Kouassi Paul, Lapka Frederic.

25. Ghana



Report on waterbirds and wetlands count in January 2020, Ghana

Jones Quartey¹, Dickson Agyeman², Yaa Ntiamoah-Baidu¹ & Bernard Asamoah Boateng

¹ Centre for African Wetlands, University of Accra

² Wildlife Division of the Forestry Commission of Ghana



1. INTRODUCTION

A number of key wetland sites on the Ghana coast have been regularly monitored since 1985, first by the Ghana Wildlife Society (GWS) and subsequently by the Centre for African Wetlands (CAW). Thus providing long-term data on waterbird populations within the West African sub-region. The sites monitored include five coastal Ramsar Sites: Keta, Songor, Sakumo, Densu Delta and Muni-Pomadze. Analysis of the long term data

has shown that peak numbers of waterbirds along Ghana's coast are observed between September and November during the autumn migration. However, in some years, another peak may be observed between January and March during the northern spring migration. There are relatively low numbers of waterbirds observed on all monitored sites between May and July, the period when most species of waterbirds have migrated to their breeding grounds.

Under a contractual agreement between Wetlands International (WI) and the Wildlife Division (WD) of the Forestry Commission of Ghana, the later was tasked to undertake a 'Total count of coastal waterbirds – January 2020' in the framework of the International Waterbirds Census in the East-Atlantic Flyway. The WD sought assistance from the CAW to deliver this assignment. This chapter provides an overview on the counts carried out by the Wildlife Division of the Forestry Commission of Ghana and its partner institution, the Centre for African Wetlands.

2. METHODOLOGY

Site description

The field survey was done between 23rd – 29th January, 2020 and it involved 11 sites visited in a chronological order from the western to eastern coast of Ghana. Five of these sites have been designated as Ramsar sites: Muni-Pomadze, Densu

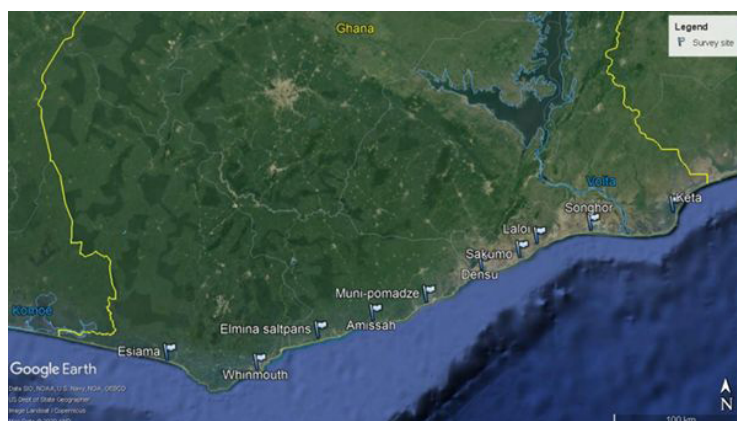


Figure 1: Sites surveyed during the 2020 International Waterbird Counts

delta, Sakumo, Songor and Keta lagoons. The other sites include a 13 kilometre sandy beach between the Ankobra and Amanzuri estuaries (Esiama beach), commercial salt pans (Laloi and Elmina salt pans), and open and closed brackish water lagoons (Whin mouth, Amissah and Narkwa lagoons). Locations of the visited sites are documented in Figure 1.

Field personnel

Each site was visited in the morning between 07:00 and 11:00 GMT by at least 4 field personnel with varying degrees of experiences in waterbird monitoring, and a driver. Survey of waterbirds on larger sites (for example Keta/Songor Ramsar sites) lasted for longer periods.

Counting Protocol

The counting of waterbirds followed the protocol that has been used over the years by the Centre for African Wetlands in order to allow for comparison of data with that of previous years. Larger sites have been divided into smaller count units. For example, Songor Ramsar site and Elmina salt pans have 4 different count units each: Pute, Totope, Kablevu, Lolonya and Bronyibima, Elmina Panbros, Mr. Mensah salt pans and Tetelem for Songor Ramsar site and Elmina salt pans respectively. Keta has 10 count units, namely: Adina, Afiadenyigba, Anlogo, Anyako, Denu, Dudu Island, Fiahor, Keta, Srogbe-Fiahor and Tegbi. Within each count unit/site, pre-existing transects were used by field personnel on foot. Some of the sites had observation post or hilly areas which presented counters a broader view to count large flocks of roosting or foraging birds. Data on bird count were collated later and entered into the standard excel format provided for the IWC count.

3. RESULTS

A total of 54,200 individual waterbirds were observed on all sites during the survey period

belonging to 6 groups of waterbirds (Cormorants, Ducks, Gulls and Terns, Herons, Rails and Waders), 14 families and 56 species. The Ramsar sites supported 79.96% of the total number of observed waterbirds with species richness between 24 and 45 (Table 1). The most important unprotected site was the Elmina salt pans supporting 31 waterbird species with a total of 4,494 individuals accounting for 8.29% of the total number of waterbirds encountered during the survey. The 5 most abundant species observed during the survey were *Charadrius hiaticula* (13.28%), *Himantopus himantopus* (10.74%), *Microcarbo africanus* (*Phalacrocorax africanus*) (9.40%), *Tringa nebularia* (9.31%) and *Calidris ferruginea* (9.05%) (Table 2).

4 DISCUSSION

The Densu delta supported 40.80%, 50.64% and 100% of all *C. hiaticula*, *H. himantopus* and *Sterna dougallii* individuals, respectively, observed during the survey. The Keta lagoon complex also supported 53.35%, 53.54%, 98.62% and 99.0% of all *T. nebularia*, *M. africanus*, *Dendrocygna viduata* and *Hydroprogus caspia* individuals, re-

Table 1 Number of species and individual waterbirds observed along Ghana's coast during the 2020 waterbird census

Sites	Status	No. of Waterbird Species	No. of Water-birds
Amissah lagoon	Unprotected	8	114
Densu Delta	Protected	44	15672
Elmina Salt pans	Unprotected	31	4494
Esiama Beach	Unprotected	22	1089
Keta Lagoon	Protected	45	23498
Lalui lagoon	Unprotected	27	1511
Muni -Pomadze	Protected	32	2255
Narkwa	Unprotected	17	511
Sakumo Lagoon	Protected	26	725
Songor Lagoon	Protected	24	1190
Whinmouth	Unprotected	17	3141
Total			54200

Table 2 Species abundance and distribution on all 11 sites along the coast of Ghana

Scientific name	English name	Total 2020	Scientific name	English name	Total 2020
<i>Dendrocygna viduata</i>	White-faced Whistling-duck	3,560	<i>Numenius phaeopus</i>	Whimbrel	380
<i>Spatula querquedula</i>	Garganey	1	<i>Numenius arquata</i>	Eurasian Curlew	48
<i>Gallinula chloropus</i>	Common Moorhen	54	<i>Limosa lapponica</i>	Bar-tailed Godwit	47
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	3	<i>Limosa limosa</i>	Black-tailed Godwit	58
<i>Butorides striata</i>	Green-backed Heron	31	<i>Arenaria interpres</i>	Ruddy Turnstone	75
<i>Ardeola ralloides</i>	Squacco Heron	57	<i>Calidris pugnax</i>	Ruff	5
<i>Bubulcus ibis</i>	Cattle Egret	543	<i>Calidris ferruginea</i>	Curlew Sandpiper	4,907
<i>Ardea cinerea</i>	Grey Heron	888	<i>Calidris alba</i>	Sanderling	528
<i>Ardea melanocephala</i>	Black-headed Heron	1	<i>Calidris minuta</i>	Little Stint	1,637
<i>Ardea purpurea</i>	Purple Heron	26	<i>Actitis hypoleucos</i>	Common Sandpiper	332
<i>Ardea alba</i>	Great White Egret	1,343	<i>Tringa erythropus</i>	Spotted Redshank	57
<i>Ardea brachyrhyncha</i>	Yellow-billed Egret	168	<i>Tringa nebularia</i>	Common Greenshank	5,044
<i>Egretta ardesiaca</i>	Black Heron	388	<i>Tringa totanus</i>	Common Redshank	69
<i>Egretta garzetta</i>	Little Egret	3,693	<i>Tringa glareola</i>	Wood Sandpiper	249
<i>Egretta gularis</i>	Western Reef-egret	1,199	<i>Tringa stagnatilis</i>	Marsh Sandpiper	105
<i>Microcarbo africanus</i>	Long-tailed Cormorant	5,097	<i>Glareola pratincola</i>	Collared Pratincole	573
<i>Burhinus senegalensis</i>	Senegal Thick-knee	28	<i>Larus fuscus</i>	Lesser Black-backed Gull	105
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	5	<i>Sternula albifrons</i>	Little Tern	789
<i>Himantopus himantopus</i>	Black-winged Stilt	5,820	<i>Hydroprogne caspia</i>	Caspian Tern	200
<i>Pluvialis squatarola</i>	Grey Plover	876	<i>Chlidonias niger</i>	Black Tern	125
<i>Charadrius hiaticula</i>	Common Ringed Plover	7,199	<i>Sterna dougallii</i>	Roseate Tern	32
<i>Charadrius pecuarius</i>	Kittlitz's Plover	63	<i>Sterna hirundo</i>	Common Tern	523
<i>Charadrius marginatus</i>	White-fronted Plover	27	<i>Thalasseus sandvicensis</i>	Sandwich Tern	2,163
<i>Vanellus spinosus</i>	Spur-winged Lapwing	538	<i>Thalasseus maximus</i>	Royal Tern	3,874
<i>Vanellus senegallus</i>	Wattled Lapwing	14	<i>Corythornis cristatus</i>	Malachite Kingfisher	10
<i>Actophilornis africanus</i>	African Jacana	87	<i>Ceryle rudis</i>	Pied Kingfisher	406

spectively. The Sakumo and Muni lagoons supported 28.62% of *Vanellus spinosus* and 24.40% of *Actitis hypoleucos* individuals, respectively. The Esiama beach, an unprotected site, continue to be the most important site for Sanderlings supporting 31.06% of the total number of Sanderlings observed along the Ghana coast. All *Haematopus ostralegus* individuals encountered during the survey were observed along the Esiama beach. Similarly, all *Tringa erythropus* individuals encountered were observed at the Laloi lagoon. The Elmina salt pans supported 30.37%, 34.21% and 71.33% of the total number of *Pluvialis squatarola*, *Numenius phaeopus* and *Milvus migrans parasitus* individuals, respectively. More than 50% of all *Thalasseus maximus* individuals encountered during the survey were observed at Whinmouth. Only Keta lagoon complex supported more than 20,000 individual waterbirds (Table 1).

Environmental assessment

Assessment of environmental pressures (either natural or anthropogenic) was done for each site over the past year (from the last assessment in 2019 to date) following the different categories on the IWC environmental assessment document. For each category, the sources and quality of data for assessment was done either through evidence based or by expert opinion and reported as such.

Conclusion

The Ghana coast continues to be important for some species of waterbirds of the East Atlantic Flyway population using the different wetlands either as staging or 'wintering' sites. It is important to note that, peak counts of waterbirds in Ghana are observed between September and November. Therefore, the low numbers of waterbirds observed on all sites but the Keta Lagoon complex during the 2020 IWC, does not devalue the importance of these sites, especially the Ramsar sites. But the January count which involves concerted efforts from West African and European countries enables appreciation of the population dynamics of total population at the East Atlantic Flyway, while frequent counts of individual sites concerning longer periods, although expensive, are more important for assessing changes in bird populations at the sites.

APPENDIX

List of participants

Alfred Ali Nuoh, Jones Quartey, Emmanuel Taye, Frank Tandoh, James Selormey, Emmanuel Agudetse, Desree Guoluguuh Nakaar, Hope Avuletey,

26. Benin



Rapport du dénombrement international des oiseaux d'eau (DIOE) 2020 au Bénin

Daouda M. Aliou, Arnaud Adikpeto, Sylvestre Chaffra & Joie D. E. Sossoukpe.
Benin Environment and Education Society (BEES NGO) et Direction Générale des Eaux-Forêts et Chasse (DGEFC)



1. INTRODUCTION

Pays côtier d'Afrique de l'Ouest, la République du Bénin est situé entièrement dans la zone intertropicale. La combinaison des différentes saisons a donné naissance à trois zones climatiques étalées du Sud au Nord : la zone guinéo-congolaise, la zone soudano-guinéenne et la zone soudanienne (Sinsin et al., 2004) (Figure 1) . Ces différentes zones climatiques nourrissent une succession de

zones humides dont les quatre plus importantes sont classées sites RAMSAR (Sites Ramsar 1668, 1669, 1017 et 1018). Ces écosystèmes abritent une remarquable diversité biologique en particulier l'avifaune qui est très important. On y rencontre des oiseaux autochtones et migrateurs d'origine paléarctique et intra-africaine (Cybelle Planète, 2020), qui sont depuis quelques années suivis à travers le Dénombrement International des Oiseaux d'Eau (DIOE). A cet effet, du 15 Janvier au 10 Février 2020, les professionnels du Bénin ont procédé à l'identification, au comptage et à la caractérisation des habitats des oiseaux d'eau des sites RAMSAR du Bénin (Sites Ramsar 1668, 1669, 1017 et 1018). L'édition 2020 du DIOE a été co-organisée par «Benin Environment and Education Society (BEES ONG)» et la Direction Générale des Eaux, Forêts et Chasse (DGEFC). Cette collaboration entre l'Etat central et les Organisations de la Société Civile (OSC) a permis d'associer les ONG (ADD BIO, CREDI, CEROE, Eco Bénin, ODDB, Nature Tropicale), l'Université d'Abomey Calavi et l'Université National d'Agriculture ainsi que l'Agence Béninoise pour l'Environnement (Point Focal RAMSAR).

2. METHODOLOGIE

La méthode utilisée a été caractérisée par trois étapes clés qui ont permis d'atteindre les objectifs du DIOE 2020.

- Primo, les rencontres de préparation ont permis de mettre à niveau les connaissances des

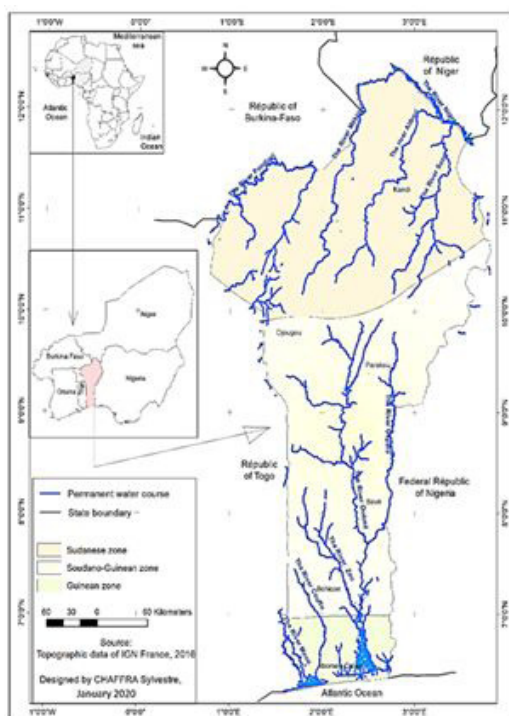


Figure 1 : Situation géographique et hydrologique du Bénin

acteurs, de définir les itinéraires et les équipes associées ainsi que la planification de la phase de collecte.

- Secundo, du 18 Janvier au 10 Février 2020, les sept équipes déployées dans les zones humides du Sud et du Nord ont procédé à l'identification, au comptage et à la caractérisation des habitats des oiseaux d'eau migrateurs et locaux (Figure 2 et 3). Des barques à moteurs hors bords ont été utilisées pour le déplacement.
- A la fin, les données collectées ont enfin été traitées et organisées dans une base de collecte avec un comité restreint qui a été mis en place pour la rédaction du rapport.

3. RESULTATS

Au total, 68 espèces d'oiseaux d'eau appartenant à 51 genres et 25 familles ont été recensées sur les principaux plans et cours d'eau des zones humides d'importance internationale du Nord et Sud-Bénin (Sites Ramsar 1668, 1669, 1017 et 1018).

4. DISCUSSION

Les principales menaces notées sur les différents sites sont :

- Développement incontrôlé des habitations humaines sur les berges des zones humides ;
- Comblement du plan d'eau par les déchets

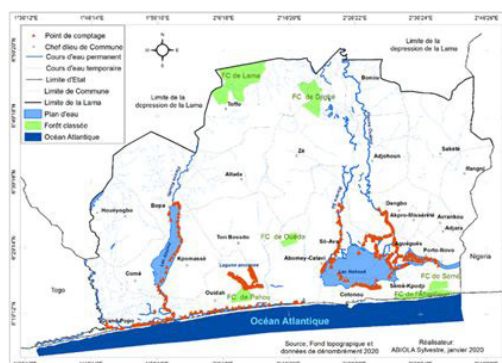


Figure 2 : La répartition spatiale des itinéraires suivis dans les deux sites Ramsar 1017 et 1018 au Sud du Bénin

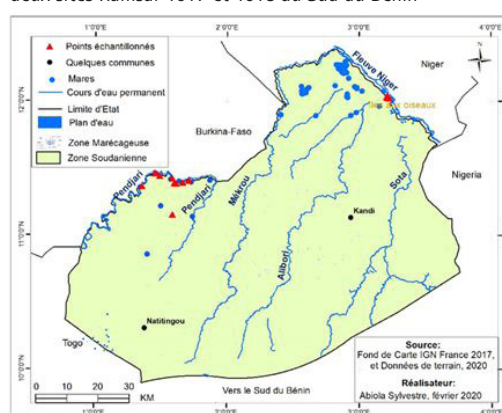


Figure 3 : La répartition spatiale des itinéraires suivis dans les deux sites Ramsar 1668 et 1669 au Nord du Bénin

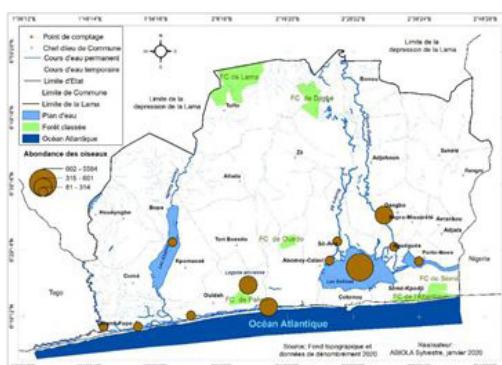


Figure 4 : Abondance des oiseaux sur les sites du Sud Bénin

solides et ménagers ;

- Prolifération des plantes aquatiques envahissantes ;
- Installation non réglementée des pêcheries sédentaires ;
- Petite chasse des oiseaux d'eau
- Extraction non contrôlée de sédiments dans les lacs et lagunes ;
- Destruction de la mangrove etc.

Difficultés rencontrées

Quelques difficultés ont marquées le déroulement de l'édition 2020 DIOE au Bénin dont les plus importantes sont :

Tableau 1: Effectifs des oiseaux dénombrés

Scientific name	French name	Total 2020
<i>Dendrocygna viduata</i>	Dendrocygne veuf	7,841
<i>Plectropterus gambensis</i>	Oie-armée de Gambie	26
<i>Sarkidiornis melanotos</i>	Canard à bosse	4
<i>Nettapus auritus</i>	Anserelle naine	10
<i>Zapornia flavirostra</i>	Marouette à bec jaune	43
<i>Gallinula chloropus</i>	Gallinule poule-d'eau	11
<i>Balearica pavonina</i>	Grue couronnée	40
<i>Leptoptilos crumenifer</i>	Marabout d'Afrique	23
<i>Anastomus lamelligerus</i>	Bec-ouvert africain	46
<i>Ciconia microscelis</i>	Cigogne épiscopale	24
<i>Bostrychia hagedash</i>	Ibis hagedash	15
<i>Nycticorax nycticorax</i>	Bihoreau gris	114
<i>Butorides striata</i>	Héron strié	55
<i>Ardeola ralloides</i>	Crabier chevelu	85
<i>Bubulcus ibis</i>	Héron garde-boeufs	793
<i>Ardea cinerea</i>	Héron cendré	102
<i>Ardea melanocephala</i>	Héron mélanocéphale	15
<i>Ardea goliath</i>	Héron goliath	2
<i>Ardea purpurea</i>	Héron pourpré	61
<i>Ardea alba</i>	Grande Aigrette	98
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	93
<i>Egretta ardesiaca</i>	Aigrette ardoisée	347
<i>Egretta garzetta</i>	Aigrette garzetta	286
<i>Egretta gularis</i>	Aigrette à gorge blanche	29
<i>Scopus umbretta</i>	Ombrette africaine	30
<i>Microcarbo africanus</i>	Cormoran africain	1,869

Scientific name	French name	Total 2020
<i>Burhinus senegalensis</i>	Oedicnème du Sénégal	2
<i>Pluvianus aegyptius</i>	Pluvier fluviatile	10
<i>Himantopus himantopus</i>	Échasse blanche	143
<i>Charadrius dubius</i>	Pluvier petit-gravelot	7
<i>Vanellus spinosus</i>	Vanneau à éperons	58
<i>Vanellus senegallus</i>	Vanneau du Sénégal	42
<i>Actophilornis africanus</i>	Jacana à poitrine dorée	286
<i>Numenius phaeopus</i>	Courlis corlieu	36
<i>Limosa limosa</i>	Barge à queue noire	1
<i>Calidris ferruginea</i>	Bécasseau cocorli	4
<i>Gallinago gallinago</i>	Bécassine des marais	1
<i>Actitis hypoleucos</i>	Chevalier guignette	50
<i>Tringa erythropus</i>	Chevalier arlequin	1
<i>Tringa nebularia</i>	Chevalier aboyeur	18
<i>Tringa glareola</i>	Chevalier sylvain	6
<i>Tringa stagnatilis</i>	Chevalier stagnatile	42
<i>Glareola pratincola</i>	Glaréole à collier	8
<i>Sternula balaenarum</i>	Sterne des baleiniers	31
<i>Chlidonias niger</i>	Guifette noire	1
<i>Thalasseus sandvicensis</i>	Sterne caugek	31
<i>Thalasseus maximus</i>	Sterne royale	42
<i>Pandion haliaetus</i>	Balbusard pêcheur	4
<i>Circus aeruginosus</i>	Busard des roseaux	12
<i>Haliaeetus vocifer</i>	Pygargue vocifer	1
<i>Corythornis cristatus</i>	Martin-pêcheur huppé	55
<i>Ceryle rudis</i>	Martin-pêcheur pie	201

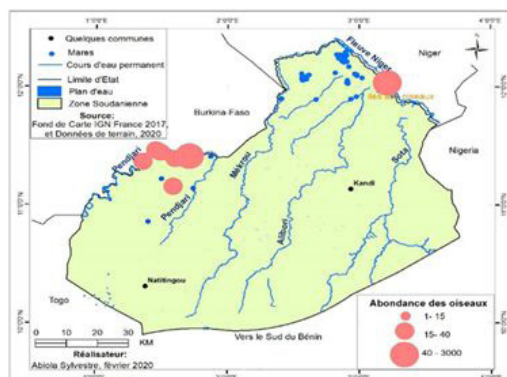


Figure 5 : Abondance des oiseaux sur les sites du Nord Bénin

- Nombre limité de spécialistes en dénombrement des oiseaux d'eau pour un comptage simultané ;
- Insuffisance de matériels (jumelles, guides, appareil photo, télescope etc.) pour l'efficacité des observations et du comptage ;
- Présence des pêcheries sédentaires, des filets et des pièges de pêche sur les itinéraires de dénombrement des plans et cours d'eau prospectés.

Recommandations

Les activités de dénombrement d'oiseaux d'eau des zones humides du Nord et du Sud-Bénin 2020 se sont bien déroulées. Cette année, l'équipe de dénombrement a essayé de collecter les données sur quelques sites du Nord en plus des traditionnels sites du sud. Toutefois, tous les sites du Nord

n'ont pas été couverts pour plusieurs raisons de même que les sites du centre. Un dénombrement exhaustif des oiseaux d'eau de toutes les zones humides du Sud, du Centre et du Nord est désormais une nécessité afin d'avoir des données complètes sur l'état de l'avifaune au Bénin.

Remerciements

La collaboration entre la Direction Générale des Eaux, Forêts et Chasse (DGEFC), BEES ONG et les structures impliquées dans les DIOE au Bénin a permis d'obtenir ces résultats. Nous remercions ainsi tout particulièrement Wetlands International et AEWa pour leurs divers soutiens; l'Université Nationale d'Agriculture, la Direction de la Production Halieutique pour leurs appuis et les différentes structures et ONG pour leur participation et leur soutien à cette activité.

ANNEXE

Liste des compteurs (observateurs)

ADIKPETO Arnaud Wilfrid, AKAMBI Is Deen, AMADOU BAHLEMAN Farid, ZONNIGBO Wilfried, BRISSO Nassirou, CHABI Hermann G., CHAFFRA A. Sylvestre, DANSI Mathias, DEGLA Hugues Marius, DOSSOU Etienne, DOSSOU Essin Florent, HOUIN-DOTE Elodiade, HOUNDELO Laetitia, HOUNGBEDJI Mariano, KOUMASSA Moise, MADOGOTCHA Josias, MAMA Sadam, OLATOUNDI Yves A., SOSSOUKPE Joie D.E., SOUROU Arnaud, TOVIESSI Mathieu, TCHANKPAN Camille B., YANGUENON Bonaventure

27. Nigeria



International Waterbird Census 2020 (IWC) in Nigeria

Joseph Onoja
Nigerian Conservation
Foundation (NCF)



1. INTRODUCTION

In Nigeria, increasing human population coupled with anthropogenic activities mainly dredging and over-fishing are severely degrading the natural habitats of water bird species. The waterbird monitoring will help to characterize the water-bird communities and empower the community to take action towards reducing identified threats.

Objectives

- To determine abundance of waterbirds in coastal Nigeria
- To identify threats at wetlands and for water birds

2. METHODOLOGY

A line transect using a boat was adopted for this surveys due the thick vegetation of Nipa Palm (*Nypa fruticans*), mangrove and lack of trails. This method was adopted to sight and record bird species seen and heard.

Institutions, organizations or associations involved

Nigeria Conservation foundation
Eko Bird Club (EBC)
University of Uyo

3. RESULTS

A total of 2,477 individual water birds of 30 species were recorded during the survey in Nigeria (table 1) out of which, 2,328 individual water birds of 23 species were recorded in Lagos while 149 individual of 17 species were recorded in Cross River. Of the 23 water bird species in Lagos, 7 are migrants while 16 are resident water birds and only 1 is a migrant while 16 are resident water bird species of the total 17 species in Cross River.

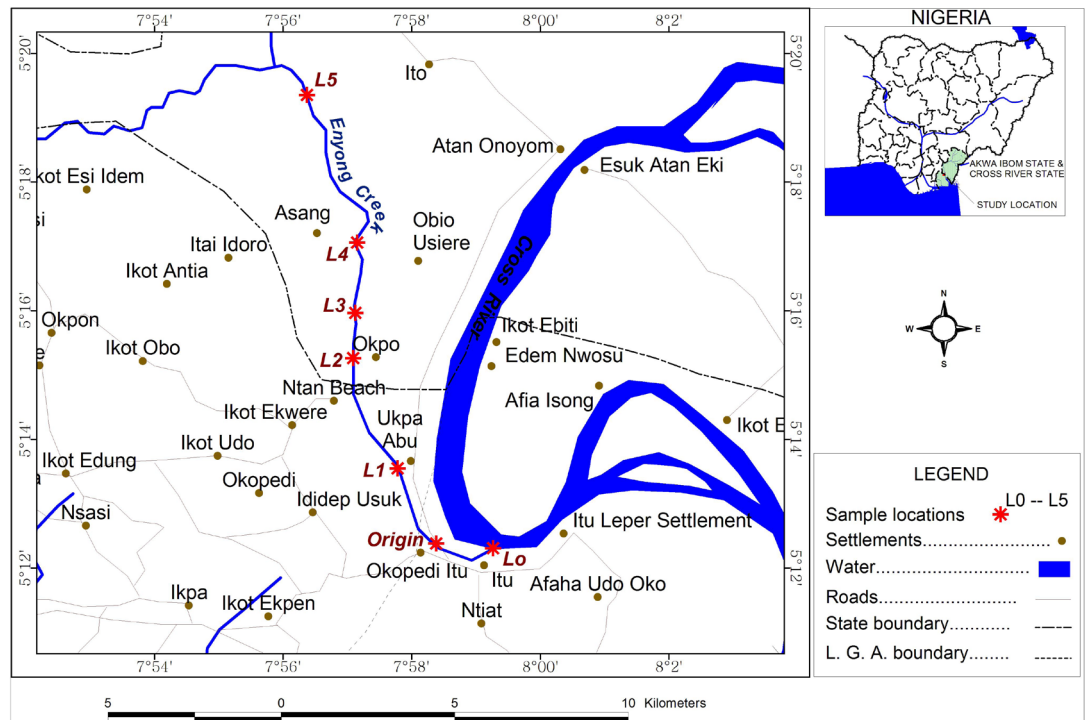


Figure 1. Overview of locations (red dots) at Cross River and position in Southeast Nigeria (in green).

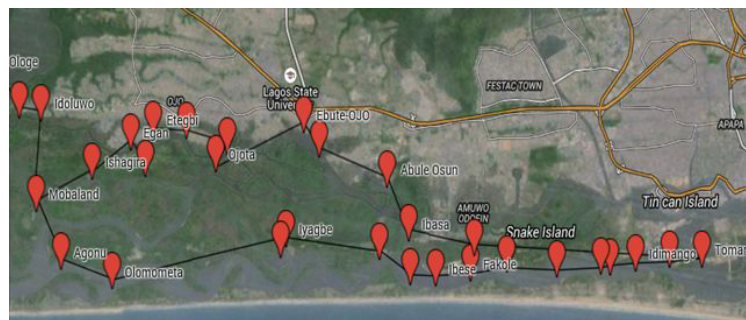


Figure 2. Covered route and observation locations at site Lagos

The migratory water birds consisted of Palaearctic-Afrotropical migrants (such as the Whimbrel *Numenius phaeopus*, Eurasian Curlew *Numenius arquata*, Wood Sandpiper *Tringa glaeola*, Common Sandpiper *Actitis hypoleucos*) and Intra-African migrants like the African Pygmy Kingfisher *Ceyx pictus*, sighted only in Cross River.

4. 'DISCUSSION

From the observations made and data obtained during this survey, it is concluded that water birds recorded constitute migrants and residents which were sighted in Lagos and Cross River States, Nigeria. Increasing human population coupled with anthropogenic activities mainly dredging, sand mining, fishing, logging, Tavy of mangrove, land reclaiming for jetties and tourism facilities have severely degraded the natural habitats of water

bird species which in turn had impact on the species and number of individuals encountered during the survey when compared to previous years.

In Lagos, a total of 606 African Jacana and 1,105 White-faced Whistling Duck were recorded during this survey, but over 3,000 African Jacana and about 50 White-faced Whistling Duck were encountered in 2016 and also in 2017. Perhaps, this is caused by the difference in the habitat use between the African Jacana (using local habitat) and the White-faced Whistling Duck (going to agriculture fields in the night). This decline of local water birds could be due to frequent dredging which has reduced the mudflat habitat. The rise in number of roosting birds on open water could be ascribed to the dredging as well which had created more open water.

Observations in Cross River State in 2019 showed that the population of water birds were seriously

Table 1: Species and numbers counted in Nigeria

Scientific name	English name	Total 2020
<i>Dendrocygna viduata</i>	White-faced Whistling-duck	1,118
<i>Anastomus lamelligerus</i>	African Openbill	23
<i>Butorides striata</i>	Green-backed Heron	2
<i>Ardeola ralloides</i>	Squacco Heron	3
<i>Bubulcus ibis</i>	Cattle Egret	38
<i>Ardea cinerea</i>	Grey Heron	16
<i>Ardea melanocephala</i>	Black-headed Heron	7
<i>Ardea purpurea</i>	Purple Heron	12
<i>Ardea brachyrhyncha</i>	Yellow-billed Egret	117
<i>Egretta ardesiaca</i>	Black Heron	27
<i>Egretta garzetta</i>	Little Egret	106
<i>Egretta gularis</i>	Western Reef-egret	47
<i>Scopus umbretta</i>	Hamerkop	1
<i>Microcarbo africanus</i>	Long-tailed Cormorant	89
<i>Burhinus senegalensis</i>	Senegal Thick-knee	63
<i>Himantopus himantopus</i>	Black-winged Stilt	17
<i>Pluvialis squatarola</i>	Grey Plover	5
<i>Vanellus spinosus</i>	Spur-winged Lapwing	20
<i>Actophilornis africanus</i>	African Jacana	608
<i>Numenius phaeopus</i>	Whimbrel	32
<i>Numenius arquata</i>	Eurasian Curlew	19
<i>Actitis hypoleucos</i>	Common Sandpiper	47
<i>Tringa nebularia</i>	Common Greenshank	12
<i>Tringa glareola</i>	Wood Sandpiper	2
<i>Megaceryle maxima</i>	Giant Kingfisher	1
<i>Ceryle rudis</i>	Pied Kingfisher	30
<i>Halcyon malimbica</i>	Blue-breasted Kingfisher	3

affected as a result of anthropogenic activities and also mining of Calabar chalk, drilling and uplifting of oil and gas, thereby influencing the bird activities within the area. The situation has not changed as there is increase in the observed number of boat and industrial activities within the study area.

Counting was disrupted at the Oku Iboku/ Ikot Offiong Communities war zone near Itu bridge head (Cross River) and was left for safety reasons. However the team was taken hostage by pirates at the Creek of Inua Abasi very close to Parrots Island until the security operatives from the Nigeria Immigration service came to rescue us.

Specific threats to sites

Dredging,

- Logging and cutting of mangrove fuel wood and commercial purposes,
- High level of operation of engine boat,
- Increase industries,
- Left over fishing nets,
- Over exploitation of fish product,
- Industrial and domestic waste such as plastic,
- Human presence and disturbance.

Improvements and learning points for the future

An application similar as a phone should be created to record bird observations; obtain coordinates; measure distance of travel; climatic condition during survey, all of which should be retrieved for analysis.

Conclusion and Recommendations

In conclusion, water bird species are susceptible to pressure/threats on wetlands. To control and circumvent habitat loss, the communities should be empowered to take action toward reducing identified threats and constant surveillance of the wetlands which are used by water birds for feeding, nesting and roosting should be employed as tracking strategies of the habitat loss. Survey should be conducted whenever tide is low as it will create an avenue for small shorebirds to be sighted on mudflats.

ANNEX

List of counters (observers)

Omo Emmanuel Osagiede Titilope Badmus Damola, Owan Emmanuel, Eyos Kevin, Elvis Anyim, Edem Eniang, Aniekan Abasi Uwatt, Esther Assam, Ime Utit, Daniel Jacob

28. Cameroun



JANUARY 2020 INTERNATIONAL WATERBIRD CENSUS (IWC) IN CENTRAL COASTAL CAMEROON

Gordon Ajonina¹, Martin Timba¹
and Nji Francis²

¹Cameroon Wildlife Conservation Society, Coastal Forests & Mangrove Conservation Programme, Mangrove & Coastal Wetlands Research Centre, BP 54 Mouanko, Littoral Region

² Freelance Ornithologist, Limbe - Cameroon



1. INTRODUCTION

Cameroon has regularly participated in annual global water bird counts through its network of national volunteers from the government, NGOs, private sector and local communities. The sys-

tem and periodicity of counts have been heavily limited by accessibility and cost factors. Certain sites have been regularly counted, some counted annually while others are irregularly counted. Sites regularly counted by CWCS are especially those within the lower Sanaga Delta within the new Douala-Edea National Park with monthly census since February 1999 – 2007 (Ajonina et al. 2009) then periodically thereafter. Annually counted sites are in the coastal areas of Cameroon from Sanaga estuary to Rio Del Rey border with Nigeria excluding the southern coast from Sanaga estuary down to the Guinea Equatorial border having been very poor in waterbird numbers just less than 5% of total counts following the 2004 and 2007 counts (Van der Waarde J. J. (ed) 2007) this continued till 2017 (Ajonina, et al. 2017) then thereafter subsequently limited to the Cameroon estuary comprising the areas from the Moungo bridge to the Wouri, Douala-Edea National park and upper Sanaga Delta River (Dizangue to Atlantic coast) for a total of 30 regular count sites. Periodically or irregularly counted sites are located within the inland areas especially in around the Lake Chad, lagoon and Shari basins, Noun basins and Dschang artificial lake.

It is worthy of note that thanks to the regular counts and accumulated data base and reports since 1999 of the potentials and threats to the count areas and following recommendations from CWCS and partners that the old Douala-Edea wildlife Reserve was raised in October 2018 by

Cameroon Government to Douala-Edea National Park with extension to some 50% of the marine space including intact mangrove forests around the Wouri estuary. This makes it the first country's national park with marine components. The national assemble last year (in July 2019) ratified Cameroon accession to AEWA convention. The government has recently requested CWCS and partners to enlist more coastal and other inland sites as Ramsar Sites.

Objectives

In line with the global objective and the draft national waterbird and wetlands management plan, the January 2020 in Cameroon (a month earlier from the counts last year often between ending January –February) precipitated by anticipated by often violent legislative elections was to undertake complete counts in regularly counted coastal sites within the Douala-Edea National Marine and Terrestrial Park and Wouri Estuary with an addition of an inland lake at Dschang western region of Cameroon. Assess pressure and environmental characteristics of count sites with special reference to count areas.

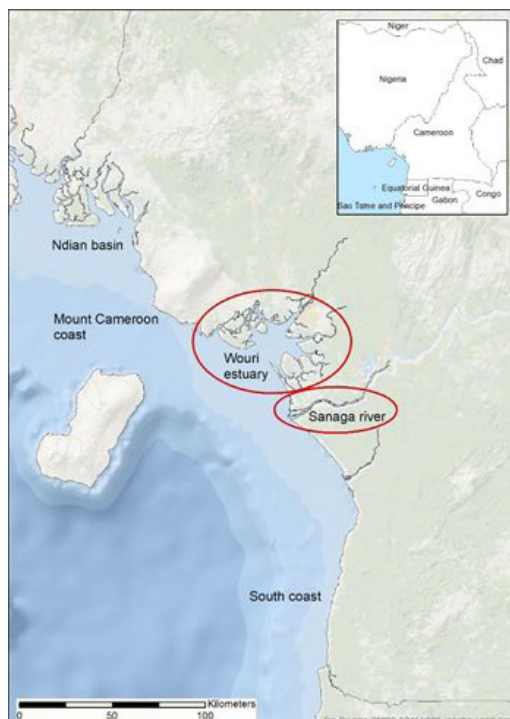


Figure 1: Map of the distribution of count sites

2. METHODOLOGY

The January 2020 counts were limited started from the Mounjo Bridge to Wouri estuary and areas within the Douala-Edea National terrestrial and Marine Park and Dschang artificial lake (see Table 1 and Figure 1) constituting francophone sites

due to the socio-political stability due to ongoing Anglophone crises sparking up into armed conflict since October 2016 that involve the north west and south west regions of Cameroon all west of the Mounjo Bridge.

During a period of 2 weeks between early and late January, 2020, the team surveyed sites within the Sanaga and Wouri basins located within Douala-Edea National Park and Douala city including the inland Dschang Municipal artificial lake for a total of 30 updated sites. In surveying the sites, we used standard bird census techniques (Bibby et al, 1992) (see map Figure 1). As usual, different habitats were counted as completely as possible. Many of the main creeks in the mangroves were visited by boat, birds were present at the mudflats bordering the mangroves but few birds were visible among the mangroves while the interior of these forests was inaccessible. Only the main channels were included in the count. Counts were performed during low tide (mudflats) and high tide (roosts on sandbars and islands). Counts and sites description information was collated and entered in the required format set by Wetlands International for subsequent analysis.

3. RESULTS

In total, 7,160 waterbirds were counted during this survey, belonging to 54 Palaearctic and afro-tropical species with about half (3,474 birds) belonging to 30 species within the Douala-Edea National park alone (table 1).

4. DISCUSSION

As noted in previous large coverage counts, for seven bird species, the 1% Ramsar criterion for wetland of international importance, is surpassed in 2 locations making these areas important for conservation. The African Skimmer, the Near Threatened (IUCN red list) bird species observed in the N'dian basin are largely the same population that breeds on the Sanaga River from March to June. Therefore these two areas are essential for the survival of this species. A large resident breeding population of Grey Pratincole is found on the Sanaga River, with 5% of the global population exceeding the 1% criterion. The lower Sanaga river therefore is highly important for both African Skimmer and Grey pratincole. Terns, Royal Tern, Little Tern and Black Tern, are found in large numbers at the Sanaga estuary. The coast is also of importance for Great White and Pink-backed Pelicans, Great White and Little Egrets and waders like Common Greenshank, Grey Plover and

Table 1, species and numbers counted at the sites covered

Scientific name	English name	French name	Total 2020
<i>Dendrocygna viduata</i>	White-faced Whistling-duck	Dendrocygne veuf	10
<i>Tachybaptus ruficollis</i>	Little Grebe	Grèbe castagneux	28
<i>Zapornia flavirostra</i>	Black Crane	Marouette à bec jaune	10
<i>Porphyrio porphyrio</i>	Purple Swamphen	Talève sultane	11
<i>Gallinula chloropus</i>	Common Moorhen	Gallinule poule-d'eau	23
<i>Mycteria ibis</i>	Yellow-billed Stork	Tantale ibis	15
<i>Anastomus lamelligerus</i>	African Openbill	Bec-ouvert africain	153
<i>Ciconia microscelis</i>	African Woollyneck	Cigogne épiscopale	23
<i>Threskiornis aethiopicus</i>	African Sacred Ibis	Ibis sacré	7
<i>Bostrychia hagedash</i>	Hadada Ibis	Ibis hagedash	7
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	Bihoreau gris	3
<i>Butorides striata</i>	Green-backed Heron	Héron strié	18
<i>Ardeola ralloides</i>	Squacco Heron	Crabier chevelu	19
<i>Bubulcus ibis</i>	Cattle Egret	Héron garde-boeufs	286
<i>Ardea cinerea</i>	Grey Heron	Héron cendré	56
<i>Ardea melanocephala</i>	Black-headed Heron	Héron mélanocéphale	2
<i>Ardea goliath</i>	Goliath Heron	Héron goliath	5
<i>Ardea purpurea</i>	Purple Heron	Héron pourpré	2
<i>Ardea alba</i>	Great White Egret	Grande Aigrette	50
<i>Ardea brachyrhyncha</i>	Yellow-billed Egret	Héron à bec jaune	1
<i>Egretta garzetta</i>	Little Egret	Aigrette garzette	298
<i>Egretta gularis</i>	Western Reef-egret	Aigrette à gorge blanche	59
<i>Scopus umbretta</i>	Hamerkop	Ombrette africaine	13
<i>Pelecanus rufescens</i>	Pink-backed Pelican	Pélican gris	2
<i>Pelecanus onocrotalus</i>	Great White Pelican	Pélican blanc	10
<i>Microcarbo africanus</i>	Long-tailed Cormorant	Cormoran africain	58

Scientific name	English name	French name	Total 2020
<i>Anhinga rufa</i>	African Darter	Anhinga d'Afrique	14
<i>Burhinus senegalensis</i>	Senegal Thick-knee	Oedicnème du Sénégal	7
<i>Himantopus himantopus</i>	Black-winged Stilt	Échasse blanche	1
<i>Pluvialis squatarola</i>	Grey Plover	Pluvier argenté	250
<i>Charadrius hiaticula</i>	Common Ringed Plover	Pluvier grand-gravelot	224
<i>Charadrius marginatus</i>	White-fronted Plover	Pluvier à front blanc	33
<i>Vanellus spinosus</i>	Spur-winged Lapwing	Vanneau à éperons	1
<i>Vanellus albiceps</i>	White-headed Lapwing	Vanneau à tête blanche	40
<i>Actophilornis africanus</i>	African Jacana	Jacana à poitrine dorée	84
<i>Numenius phaeopus</i>	Whimbrel	Courlis corlieu	49
<i>Numenius arquata</i>	Eurasian Curlew	Courlis cendré	22
<i>Arenaria interpres</i>	Ruddy Turnstone	Tournepiere à collier	11
<i>Calidris pugnax</i>	Ruff	Combattant varié	4
<i>Calidris alba</i>	Sanderling	Bécasseau sanderling	24
<i>Calidris minuta</i>	Little Stint	Bécasseau minute	32
<i>Actitis hypoleucos</i>	Common Sandpiper	Chevalier guignette	132
<i>Tringa nebularia</i>	Common Green-shank	Chevalier aboyeur	210
<i>Tringa totanus</i>	Common Red-shank	Chevalier gambette	151
<i>Tringa glareola</i>	Wood Sandpiper	Chevalier sylvain	165
<i>Tringa stagnatilis</i>	Marsh Sandpiper	Chevalier stagnatile	6
<i>Glareola cinerea</i>	Grey Pratincole	Glaréole grise	971
<i>Rynchops flavirostris</i>	African Skimmer	Bec-en-ciseaux d'Afrique	1,385
<i>Larus fuscus</i>	Lesser Black-backed Gull	Goéland brun	1
<i>Sternula albifrons</i>	Little Tern	Sterne naine	309
<i>Hydroprogne caspia</i>	Caspian Tern	Sterne caspienne	318
<i>Thalasseus maximus</i>	Royal Tern	Sterne royale	1,543

Ringed Plover. The Wouri estuary and Sanaga River and surrounding wetlands are home to the West African Manatee. The Sanaga and Wouri estuaries still contain large areas of pristine mangrove forests which form important breeding grounds for fish, invertebrates and other components of the food web.

Specific threats to sites

- The Wouri estuary is still at greater risk of habitat destruction due to present and future industrial activities and other infrastructural development including settlement in the

Douala harbour area and unsustainable use of natural resources by the population in the region. Birds' numbers in the areas dropped significantly.

- The lower Sanaga River is already evidencing the risk of habitat destruction due to ongoing hydropower construction upstream (Lom Pangar dam) on the Sanaga, large ecotourism complex near the Sanaga Estuary and unsustainable use of natural resources by the population in the region. notwithstanding the laudable recent government effort of the upliftment of the Douala-Edea wildlife reserve into a national park status that include about

50% marine extension including pristine mangrove forests and the country ascension to WEWA convention will greatly shape future environmental management agenda.

- In the Dschang artificial lake, siltation from small holders' farms and poor municipal wastes may further threaten species. It is expected that the development of ongoing assisted Municipal plans will take on board environmental management component.

Difficulties encountered

Thanks to the equipment provided from the Rainforest Trust Foundation to CWCS, Birdlife International (CWCS, WTG and other individual birders) and Manuals widely distributed from Wetlands International, the quality and scope of the counts continued to be boosted. However, there are still transportation cost with costly site accessibility on rough roads and high boat renting costs. It is worth mentioning the unstable socio-political situation of the country with Anglophone arm conflict and violent political elections that precipitated the counts in January earlier than the usual count period.

Conclusions

The coast of Cameroon is important for Palaearctic waders and Afrotropical waterbirds. Numbers of African Skimmer, Grey Pratincole, Royal tern and Little Tern exceed the 1% population threshold. As noted from previous counts, the Wouri or Douala estuary and the lower beaches of the Sanaga pass several criteria for the Ramsar convention and qualify as wetland of international importance. These areas currently face threats of habitat destruction due to human interventions including hydropower dam construction, heavy sand extractions, industrial developments, clearing of mangroves and overfishing. Conservation actions are recommended, including accelerating the designation of three areas under the Ramsar Convention and poverty alleviation programs for the population that inhabit these areas. These also present opportunities for birding tourism along the coast of Cameroon.

Recommendations

Based on this survey, the following recommendations are still done:

- The ongoing process of designation of Nkam-Wouri and lake Ossa and lower Sanaga Ramsar sites be accelerated to protect The Wouri Estuary and lower Sanaga River as a first step towards the conservation and

sustainable use of these wetlands. The government has just requested that more sites being added.

- Promotion of (bird) touristic sites together with incentives for private sector investment is needed to increase the potential of this sustainable alternative source of income.
- Monitoring of biodiversity values of coastal wetlands is to be continued and expanded to provide information for management plans.
- Develop a species action plan for important species notably: African Skimmer, Grey Pratincole.
- Make public studies of Environmental Impacts Assessments of economic developments in the lower Sanaga and Wouri estuaries.
- Consistent waterbird monitoring of this mapped sites.

References

Ajonina, G.N., Amougou, J.A., Ayissi, I., Ajonina, P.U., Dongmo, M.M. and Ntabe, E.N. (2009). Waterbirds as bio-indicators of seasonal - climatic changes in river basin properties from eight years monthly monitoring in lower Sanaga, Cameroon. 2009. IOP Conf. Ser.: Earth Environ. Sci. 6 292021 (<http://m.iopscience.iop.org/1755-1315/6/29/292021>)

Ajonina, G., Chi, N., Timba, M., Hornman, M.M., and Van der Waarde, J.J. (2017). January 2017 International waterbirds census (IWC) in Cameroon. Cameroon Wildlife Conservation Society (CWCS). 16pp.

Bibby, C.J., Burgess, N.D. and Hill, D.A. 1992. Bird census techniques. Academic Press, London. 257pp.

Van der Waarde J. J. (ed) 2007. Waterbird census of coastal Cameroon and Sanaga river, January March 2007. WIWO-report nr. 83. Beek-Ubbergen, The Netherlands. And make reference to the 2017 report

Annexes List of participants

Gordon Ajonina, Ebole Emmanuel, Diyouke Mi-bog Eugene, Timba Martin, Laisin Bruno, Ndele Lizette, Petga Emile Laue, Etame Prince, Atem Edwin, Chi Napoleon, Njie Francis, Talla Cecile, Bufa Collins, Kuete Michel, Mzoyem Ngnintedem Joyceline, Mandoo Chemiere, Lokili Carlyl Ngrime, Tatang Tafopi Maurice, Ngueagni Yvette, Kwemi Ndjedja Nicole Brel, Nkwemi Ngiyep Laurelle P., Eph Ndi Martinien, Paga Paga Benoît G., Same Nzoko Martial, Dongmo Nguépi Phalone, Pegue Yemtsa Kevine, Edith Asaijang Agharih, Takwi Ako Sampson, Jaap van de Waarde.

29. São Tomé and Príncipe



INTERNATIONAL WATER- BIRD CENSUS SÃO TOMÉ AND PRÍNCIPE – 2020

Ricardo Faustino de Lima &
Marquinha Martins



1. INTRODUCTION

The importance of the endemic-rich forest avifauna of São Tomé and Príncipe is internationally recognized. However, the diversity of aquatic birds in the country is not well known. It has relevant seabird colonies at regional level, namely Sooty tern *Onychoprion fuscatus* and Brown booby *Sula leucogaster*, and is visited by some coastal bird species following the Eastern Atlantic migratory route.

Objectives

The main objective of this census, framed in the 2020 International Waterbird Census, is to improve knowledge about the country's aquatic avifauna. This census will also:

- Define standard census techniques to be used across predefined coastal locations on both islands;
- Assess the presence, abundance and trends of waterbird species occurring in São Tomé and Príncipe in January;
- Train, engage, and raise awareness of Santomeans about biodiversity science and conservation, using birdwatching as a tool.

2. METHODS

The 2020 census took place in Príncipe on January 16th, 17th and 18th, in São Tomé on 22nd, 25th and 26th, and in Tinhosas on 29th, covering a diversity of aquatic habitats, including beaches, coastal lagoons, estuary zones, rivers and islets (Fig. 1). Easily accessible areas were sampled using 10-minute point counts, while islets and less accessible coastal areas were sampled using boat transects. In Tinhosas, estimates were applied based on a methodology previously developed for the site that focuses mainly on breeding couples.

The census was accompanied by more than 20 people, representing various institutions, which provided an opportunity to build capacities and train these participants in bird identification, familiarization with ecology and threats to various aquatic habitats, as well as training in bird census techniques.

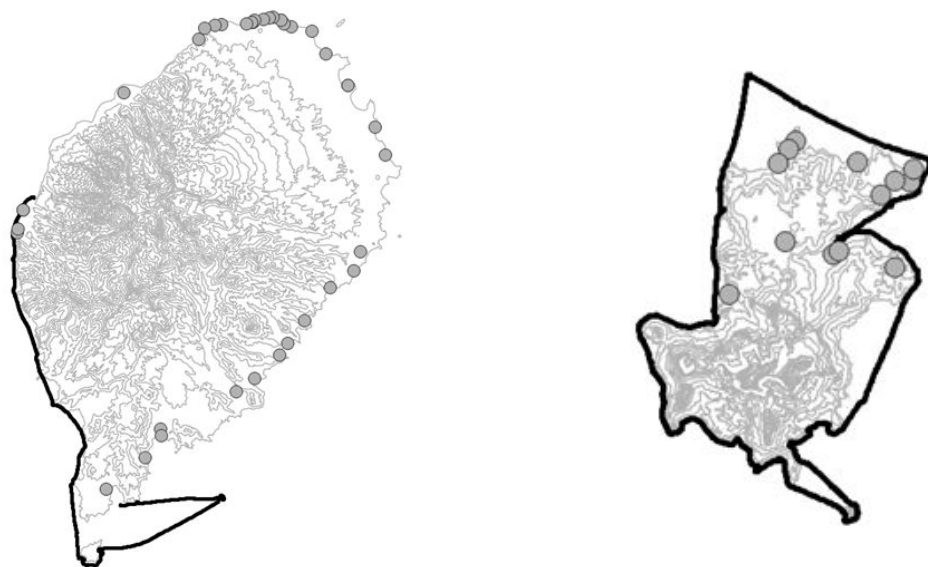


Figure 1: São Tomé and Príncipe sites sampled during the 2020 waterbird census, including 10 minutes point counts (grey circles) and boat transects (black lines).

3. RESULTS

216 209 individuals were counted and are divided into 23 species (table 1). This work confirmed the presence of regularly occurring coastal species on both islands, such as Common Sandpiper *Actitis hypoleucos*, Cattle Egret *Bubulcus ibis*, Striated Heron *Butorides striatus*, Western Reef Heron *Egretta gularis*, Waterhen *Gallinula chloropus*, Black Kite *Milvus migrans*, Whimbrel *Numenius phaeopus*, White-tailed Tropicbird *Phaeton lepturus*, and Common Greenshank *Tringa nebularia*. The presence of Reed Cormorant *Phalacrocorax africanus* is confirmed to be regular in São Tomé, but rare in Príncipe. In both islands the most frequent species were the reef heron and the kite. It has been confirmed the nesting of Cattle Egrets in several places (Roque and Lapa in Príncipe, Praia Plano in São Tomé), as well as nesting of reef heron (Roque). The Blue-breasted Kingfisher *Halcyon malimbica dryas* is an endemic subspecies of Príncipe, while each island has its own Kingfisher species (also considered as subspecies from Malachite Kingfisher): *Corythornis nais* in Príncipe and *C. thomensis* in São Tomé. During the census some less frequent coastal birds were recorded, such as Grey Heron *Ardea cinerea* (4th record for São Tomé and 5th for the country), Ruddy Turnstone *Arenaria interpres* (frequent in Tinhosas, but with few records at national level), Wood Sandpiper *Tringa glareola* (relatively frequent on the north coast, but with no record in other parts of the country) and an unidentified *Rallidae* in Bombom, Príncipe.

In terms of strict seabirds, Black Noddy *Anous minutus*, Brown Noddy *A. stolidus*, Bridled Tern *Onychoprion anaethetus*, Sooty Tern *O. fuscatus* and Brown Booby *Sula leucogaster* were observed. Nesting was confirmed only in Jockey Cap (Brown Booby) and Tinhosas (Black Noddy, Brown Noddy, Bridled Tern and Brown Booby). In São Tomé there were unexpected numbers of Black Noddy, where the species is supposed to be scarce.

4. Discussion

Specific threats to sites

The presence of Alien species (plants, fish, invertebrates) is the most blatant threat to Príncipe.

In São Tomé:

- All sorts of farming for the island as a whole. Oil palm monoculture and small-scale farming (coconut, horticulture and livestock) are probably the most relevant. Small-scale farming is probably the one having the most direct impact, since this is how most wetlands are converted to other uses or explored in the island. However, other types of agricultures might also have a significant impact in the surroundings, with indirect impact on the wetlands, namely in terms of soil erosion, nutrient cycling and pollutant runoff.
- The island is very densely populated and over half of the population lives on the coast areas with very poor sanitation. Therefore, many wetlands are being swallowed by near-

Table 1: Number of waterbirds recorded per species during the 2020 census.

Scientific name	English name	Total 2020
<i>Cairina moschata</i>	Muscovy Duck	1
<i>Gallinula chloropus</i>	Common Moorhen	8
<i>Butorides striata</i>	Green-backed Heron	24
<i>Bubulcus ibis</i>	Cattle Egret	33
<i>Ardea cinerea</i>	Grey Heron	1
<i>Egretta gularis</i>	Western Reef-egret	207
<i>Microcarbo africanus</i>	Long-tailed Cormorant	47
<i>Numenius phaeopus</i>	Whimbrel	27
<i>Arenaria interpres</i>	Ruddy Turnstone	9
<i>Actitis hypoleucos</i>	Common Sandpiper	52
<i>Tringa nebularia</i>	Common Greenshank	14
<i>Tringa glareola</i>	Wood Sandpiper	2
<i>Anous stolidus</i>	Brown Noddy	70,908
<i>Anous minutus</i>	Black Noddy	1,635
<i>Onychoprion fuscatus</i>	Sooty Tern	142,361
<i>Onychoprion anaethetus</i>	Bridled Tern	5
<i>Corythornis cristatus</i>	Malachite Kingfisher	36
<i>Halcyon malimbica</i>	Blue-breasted Kingfisher	7

by populations, especially around the capital and in some smaller fishing villages. The situation is very distinct on both islands, but in both the expansion of shanty towns/ poor fishermen villages, and by tourism/luxury developments are considerable threats.

- The habitat is affected by drainage/ destruction of wetland habitat in some cases, while in other cases more indirectly by increase presence of people, joint with sewage discharge, pollution and activities such as fishing and tourism.
- There are several roads crossing the IBA, namely inside the Obô Natural Park, and these are likely to have strong impacts in the ecosystem dynamic, since they are constraining the flow between fresh and salt-water.
- Mostly small fishing boats, but these are many times left in the beaches near the estuarine areas.
- Sand extraction. It does not involve pollution, as other extractive activities, but marine sand extraction is destroying the coastline and promoting the advance of sea level.
- Wetland species are usually not targeted, except for the marine species, most of which breed in offshore islets.
- There is nevertheless hunting in coastal wetlands of the main island, targeting other groups, such as pigeons and monkeys. This causes disturbance to waterbirds, as does fishing, which is not very intensive in wetlands, but widespread. Besides disturbance, fishing might also affect the food web on

which waterbirds depend.

- The use of grenades for fishing is widely blamed for having destroyed marine and coastal habitats (e.g. mangrove).
- Not much is known about which species are invasive, but tilapia, probably several invertebrates and certainly many plant species. Coastal habitats have been the most changed in the island, currently being widely covered by coconut, oil palm, indian almond and other invasive species. Since the island is oceanic, all these introductions have the potential to cause severe damage to the ecosystems.
- There are very few industries, but the potential to cause serious harm is high, moreover when there are no means to control those impacts. There have been several incidents with oil spills, probably resulting from large vessels cleaning tanks in high water. The island has no means to control that type of activity.
- Overall, there is little capacity to acquire chemicals to use in agriculture, but when these are obtained there is also little knowledge and sensitivity on how to use them. Moreover, in recent years, oil palm monocultures, some of which located near coastal wetlands, have used huge quantities of agricultural chemicals that are draining to the soil and water.

Difficulties encountered

It is difficult to compare with results from previous years, especially because of the differences in the sites sampled and the techniques used. Therefore, it is imperative that in subsequent years the same sites (or at least a subsample of them, depending on resource availability) are always sampled using the same techniques. During field work, it was possible to observe some threats to waterbirds as well as some barriers that prevented sampling of points visited in previous censuses.

ANNEX

List of Participants

Ricardo F. de Lima, Frazer Sinclair, Meyer António, Marquinha Martins, Yodiney Santos, Ayres Pedronho, Ibizaltino Quaresma, Manuel de Souza, Ana Besugo, João Leite, João Francisco, Kasia Mikolajczak, Mariana Cravo, Ângela Lima, Rute da Cruz, Dilson Madre Deus, Leonel Viegas, Seduney "Dulay" Samba, Aristides "Nity" Santana, Gabriel Oquiongo, Gabriel "Yeli" Cabinda, Marion Tafani, António Camuenha, Roger Pires, Márcio Gonçalves

30. Gabon



Rapport technique du Dénombrement International des Oiseau d'Eau en 2020 au Gabon

Alphosine Koumba Mfoubou
Ministere Eaux et Forests, Inventaires et de la Protection de la Faune, Libreville /Gabon

1. INTRODUCTION

Le Gabon, situé en Afrique centrale, est traversé par l'équateur et couvre un territoire de 267 670 km². Environ 800 km de littoral lui donnent accès à l'océan Atlantique au sud du golfe du Biafra, dans le golfe de Guinée. Le climat y est tropical, chaud et humide. Le relief du Gabon est constitué d'une plaine côtière basse, de collines à l'intérieur du pays et de savanes à l'est et au sud. Le système hydrographique dense est composé d'un abondant réseau de cours d'eau permanents. Le grand bassin versant de l'Ogooué domine ceux, plus modestes, des fleuves côtiers Nyanga et Komo. Seuls les cours inférieurs des plus grands fleuves sont navigables toute l'année: le Komo, de Kango à Libreville et l'Ogooué se jetant directement dans l'océan atlantique sur une plus grande

distance avec de nombreuses zones humides et plan d'eau indispensables pour les oiseaux d'eau le long de la voie de migration.

Il partage ses frontières au nord-ouest avec la Guinée équatoriale et le Cameroun, à l'est et au sud avec le Congo. Le Gabon a participé comme chaque année, au Dénombrement International des Oiseaux d'Eau (DIOE) qui a eu lieu à la période allant du 1er au 17 Février 2020, dans les provinces de l'Estuaire et de la Nyanga, plus précisément à l'ouest et au sud-ouest du Pays. Le DIOE a porté sur trois sites au total, situés sur le littoral, le long la voie de migration de l'Atlantique Est.

2. METHODOLOGIE

L'équipe du Réseau National chargée du Dénombrement International des Oiseaux d'Eau du Gabon, s'efforce à appliquer la même méthodologie au fil des ans, et revient dans les mêmes sites, afin de mettre en place un monitoring des oiseaux d'eau migrateurs; ce qui permettra de : comparer des résultats, déceler les fluctuations au sein des populations d'oiseaux, détecter le changement dans l'abondance des oiseaux ou de leur composition spécifique, et réagir par des mesures de conservation si nécessaires. Les travaux de dénombrement ont été conduits de différentes manières selon l'accessibilité, l'étendu et la nature du site. Les zones côtières, les bancs de sable, les mares résiduelles, et les mangroves ont été visitées à pied après un voyage en pirogues motorisées. Le travail

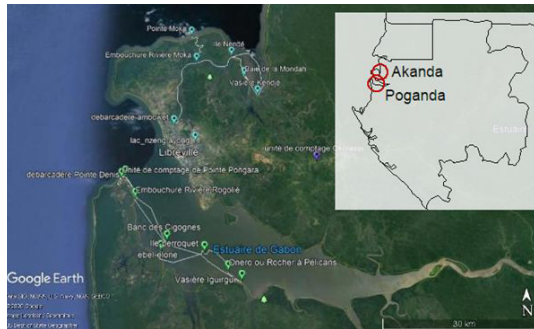


Figure 1 : Positions visitées à Akanda (au nord de Libreville) et à Poganda (au sud de Libreville)



Figure 2 Positions visitées à la Lagune de Banio

sur le terrain s'est fait en équipe et chaque équipe est composée de 8 personnes : 3 observateurs, 2 chargés de prendre les notes, 1 photographe, 1 chargé du GPS, et 1 chargé de récolter les données environnementales (ZICO). Les équipes sont disposées dans les unités de comptage et commencent les travaux au même moment. Il importe de noter ici que lorsque l'unité de comptage est grande, on procède au comptage par découpage c'est-à-dire nous délimitons l'unité en allant d'un point à un point jusqu'à balayer tout le site. Les institutions qui ont participé ou contribué à la réalisation des travaux de 2020 sont : la Direction Générale de la Faune et des Aires protégées (DGFAP) ; la Direction

Provinciale des Eaux et Forêts de la Nyanga à Mayumba; l'Ecole Nationale des Eaux et Forêts du Cap Estérias (ENEF); l'Agence Nationale des Parcs nationaux du Gabon (ANPN); les ONG Aventure Sans Frontière (ASF) et Gabon Vert (GV) ; certains spécialistes et volontaires à la conservation et au développement.

3. RESULTATS

Au Gabon, 3115 oiseaux d'eau répartis sur 50 espèces ont été comptés lors du DIOE de 2020

Tableau 1: Récapitulatif des Espèces dénombrés en 2020

Scientific name	French name	Total 2020
<i>Nettapus auritus</i>	Anserelle naine	4
<i>Pteronetta hartlaubii</i>	Ptéronette de Hartlaub	1
<i>Zapornia flavirostra</i>	Marouette à bec jaune	6
<i>Gallinula chloropus</i>	Gallinule poule-d'eau	9
<i>Mycteria ibis</i>	Tantale ibis	33
<i>Ciconia microscelis</i>	Cigogne épiscopale	3
<i>Platalea alba</i>	Spatule d'Afrique	1
<i>Threskiornis aethiopicus</i>	Ibis sacré	1
<i>Bostrychia hagedash</i>	Ibis hagedash	10
<i>Nycticorax nycticorax</i>	Bihoreau gris	36
<i>Butorides striata</i>	Héron strié	9
<i>Bubulcus ibis</i>	Héron garde-boeufs	82
<i>Ardea cinerea</i>	Héron cendré	74
<i>Ardea melanocephala</i>	Héron mélanocéphale	1
<i>Ardea purpurea</i>	Héron pourpré	4
<i>Ardea alba</i>	Grande Aigrette	57
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	3
<i>Egretta garzetta</i>	Aigrette garzette	220
<i>Egretta gularis</i>	Aigrette à gorge blanche	2
<i>Scopus umbretta</i>	Ombrette africaine	6
<i>Pelecanus rufescens</i>	Pélican gris	206
<i>Pelecanus onocrotalus</i>	Pélican blanc	139
<i>Microcarbo africanus</i>	Cormoran africain	16
<i>Anhinga rufa</i>	Anhinga d'Afrique	2

Scientific name	French name	Total 2020
<i>Charadrius hiaticula</i>	Pluvier grand-gravelot	7
<i>Charadrius dubius</i>	Pluvier petit-gravelot	1
<i>Charadrius marginatus</i>	Pluvier à front blanc	67
<i>Charadrius alexandrinus</i>	Pluvier à collier interrompu	1
<i>Actophilornis africanus</i>	Jacana à poitrine dorée	5
<i>Numenius phaeopus</i>	Courlis corlieu	962
<i>Numenius arquata</i>	Courlis cendré	11
<i>Limosa lapponica</i>	Barge rousse	4
<i>Calidris canutus</i>	Bécasseau maubèche	15
<i>Calidris pugnax</i>	Combattant varié	64
<i>Calidris ferruginea</i>	Bécasseau cocorli	10
<i>Calidris alba</i>	Bécasseau sanderling	60
<i>Gallinago gallinago</i>	Bécassine des marais	3
<i>Actitis hypoleucos</i>	Chevalier guigette	144
<i>Tringa ochropus</i>	Chevalier cul-blanc	2
<i>Tringa nebularia</i>	Chevalier aboyeur	2
<i>Tringa stagnatilis</i>	Chevalier stagnatile	10
<i>Glareola cinerea</i>	Glaréole grise	2
<i>Rynchops flavirostris</i>	Bec-en-ciseaux d'Afrique	3
<i>Sternula albifrons</i>	Sterne naine	117
<i>Sterna hirundo</i>	Sterne pierregarin	35
<i>Thalasseus sandvicensis</i>	Sterne caugek	4
<i>Thalasseus maximus</i>	Sterne royale	199

4. DISCUSSION

Le DIOE 2020 a permis de:

- Renforcer la collaboration entre les acteurs intervenant dans le suivi des oiseaux d'eau ;
- Améliorer le réseau national de suivi des populations d'oiseaux d'eau ;
- Sensibiliser les populations riveraines des sites à oiseaux d'eau sur l'importance de conserver les oiseaux d'eau et leurs habitats ;
- Améliorer la collaboration avec des ONGs intervenant dans le secteur de la protection de l'environnement ;
- Visiter des sites à oiseaux qui ont été longtemps visités tel que la Banio ;
- Accroître la capacité des participants en matière d'identification et de comptage d'oiseaux d'eau par une formation avant les travaux.

Une réelle synergie s'est créée autour de la conservation des oiseaux ; par des missions de lutte contre le braconnage, des campagnes de sensibilisations menées auprès des populations et autres, ce qui a fait que depuis 2013, ces sites ont repris leur quiétude d'antan. Nous assistons au retour de certaines espèces disparues du Gabon depuis 30 ans telles que le Flamand rose, le Pélican blanc et autres grâce au déguerpissement des sujets étrangers installés à l'intérieur de ces parcs nationaux (Akanda et Pongara), depuis 1958.

Recommandations

A l'issu de ce DIOE nous recommandons :

- Elaborer des modules de formation sur la conservation des oiseaux d'eau et de leurs habitats (zones humides) à l'endroit des élèves ;
- Poursuivre la sensibilisation des populations à la conservation des oiseaux d'eau et à la restauration des habitats dégradés à travers des ONGs,
- Accroître la collaboration entre les acteurs intervenant dans le domaine de la conservation de l'environnement (structures étatiques, structures privées, ONG...), plus particulièrement sur les axes prioritaires pour le suivi des oiseaux d'eau et des zones humides.

Notons que depuis la création des 13 Parcs Nationaux du Gabon et la présence des neuf zones humides érigées en Sites Ramsar, la création d'une unité mobile nautique mixte entre Gendarmerie, Eaux et forêts et Agence Nationale des Parcs Nationaux ainsi que certaines ONG nationales œuvre pour une surveillance continue

dans les zones de conservation. Le Gabon a reçu encore un appui de la part des bailleurs dans le cadre de la coopération tripartite avec l'Initiative Voie de Migration de la Mer de Wadden (WSFI) et BirdLife International (BLI), coordonné par Wetlands International.

ANNEXE

Liste des Observateurs (compteurs)

Alphonsine KOUMBA MFOUBOU, Solange NGOUÉSSONO, Clément MBADINGA MBOUMBA, Joachim DIBAKOU – DIBAKOU, François BOUS-SAMBA, Dieu – Donné KOUMBAT, Dallia Arielle AZIZET, Evelyne OGANDAGA NGOUWA, Granny Darly ITOUMBA ITOUMBA, NZE Mathurin, Karl-Heinz BUNDE-BU-MAVIOGHE, Liliana Gwladis BOURA, Cyril MOUELE, François Xavier MBA ONDO, Cryss MAMBOUNDOU MOUIRY, Pamphile EBO, Brice Ulriche MAGANGA MABIKA, Fabrice ONDO EVOUI, BAKITA Alain, Boris, IBINGA JEAN REMY, SOUAMI NZASSI. MOUSSOUAMI MAX Aurélien,

31. Congo Brazzaville



DENOMBREMENT INTERNATIONAL DES OISEAUX D'EAU (DIOE) COMPTAGE GLOBAL 2020 AU CONGO BRAZZAVILLE

Jérôme Mokoko Ikonga

1. INTRODUCTION

La République du Congo est un pays dont la structure et le relief sont variés, car il est situé à la fois dans le bassin sédimentaire du fleuve Congo et sur les roches anciennes qui constituent le vieux socle africain, et qui ont subi des déformations importantes et une très longue érosion. L'altitude n'est jamais vraiment élevée, et pourtant les paysages offrent des contrastes assez marqués.

De par son réseau hydrographique, le Congo constitue dans son entièreté une zone humide de prédilection.

Objectifs

Les objectifs du DIOE à la République du Congo sont :

- Recueillir et collecter les données de dénombrements annuels sur la diversité et l'abon-

dance des espèces d'oiseaux d'eau en général en mettant l'accent sur les oiseaux d'eau migrateurs du pays en particulier.

- Identifier les principales menaces actuelles pour la conservation des habitats des zones humides qui sont les sites de reproduction, d'alimentation et d'arrêt migratoire des oiseaux aquatiques, à présenter aux décideurs politiques pour examen en vue d'un processus décisionnel approprié

2. MÉTHODOLOGIE

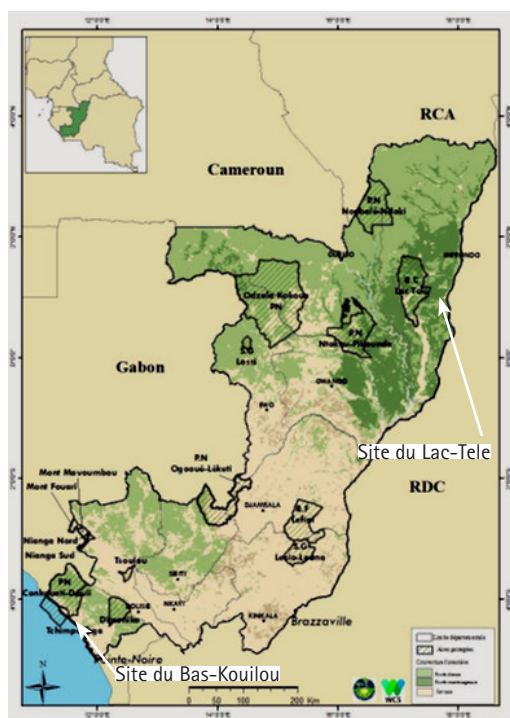
Les données de base concernant l'avifaune furent collectées lors des déplacements en pirogue motorisée le long des rivières. Pour les nichoirs qui sont éloignés des rivières, les déplacements ont été faits à pied.

Deux types de comptages ont été utilisés pour le dénombrement des oiseaux d'eau à savoir

- Le comptage à bord d'une embarcation motorisée navigant le long des rivières,
- Le comptage en poste fixe au niveau des dor-toirs et nichoirs et sur les bancs de sable.

Comptage le long de la rivière par embarcation motorisée:

Il s'agit ici de naviguer en identifiant et en enregistrant tous les oiseaux d'eau rencontrés de part et d'autre de la rivière (en vol, sur l'eau et dans la végétation).



Comptage en poste fixe :

Il consiste à se positionner sur un site et effectuer le comptage de tous les individus se trouvant sur l'arbre dortoir ou nichoir. Pour ce qui concerne les dortoirs, l'équipe de comptage arrive sur le site au moins à une heure avant l'arrivée des oiseaux (aux environs de 16 heures), pour effectuer un comptage systématique de tous les oiseaux à leur entrée sur le site.

Autres institutions, organisations ou associations impliquées

Nous avons été accompagnés sur le terrain par l'ONG RENATURA, c'est une ONG qui travaille pour la protection des tortues marines le long de la zone côtière congolaise. Le littoral du Congo (170 kilomètres de long) est fréquenté par cinq espèces de tortue marine. ZeroKilled est une agence de production audio-visuelle indépendante qui a tenu à faire un reportage de terrain sur notre travail de dénombrements. Sur le site du Lac Télé, Wildlife Conservation Society (WCS) a été impliqué.

3. RÉSULTATS

Le nombre total d'individus décomptés en République du Congo concerne le site du Bas-Kouilou avec 843 individus et du site du Lac-Télé avec 5790.

4. DISCUSSION

L'exploitation pétrolière en off-shore et en on-

shore reste la menace principale d'une grande partie de la côte congolaise et dont le site du Bas-Kouilou paye le lourd tribut. Chaque année on observe sur les berges, des dépôts d'hydrocarbures. Un autre constat est celui des végétations qui envahissent la zone de nourrissages des oiseaux.

A quelques encablures du Bas-Kouilou, au sud, une usine de farine de poisson dont l'étude d'impact n'a probablement pas été réalisée a vu le jour et est déjà mis en exploitation. La réserve du Lac-Télé est sous l'emprise saisonnière des feux de brousse qui détruisent les dortoirs et nichoirs des oiseaux. On constate aussi une disparition progressive des forêts des berges tout le long de la rivière Likouala aux Herbes.

Difficultés rencontrées, qualité et couverture du dénombrement

Si les résultats des dénombrements de l'année 2019 sur le site du Bas-Kouilou ont été perturbés par l'envahissement des plages par la végétation composée de bois morts et de jacinthe d'eau, par contre 2020 a subi les effets du changement climatique caractérisés par la disparition de la longue plage de 2 km, pour cause de pluies diluviennes. En effet, cette année, le Congo a connu une pluviométrie exceptionnelle jamais vécue depuis plus de vingt ans, causant des dégâts dans presque tout le pays. Le fleuve Kouilou a vu son débit fortement augmenté balayant ainsi sur son passage, au niveau de l'embouchure, le grand banc de sable qui l'empêchait de se jeter directement dans la mer, nous poussons ainsi, à bord d'une embarcation à rechercher quelques bancs de sable plus en aval. Sur le site du Lac-Télé par contre, les opérations de dénombrements dans l'ensemble ont été bonnes, favorisées par un bon étiage malgré les grandes inondations que ce landscape a connues. En dehors des problèmes environnementaux (disparition des plages, pollution et feux de brousse), aucune difficulté majeure n'a été rencontrée lors des dénombrements.

Points d'améliorations et d'apprentissage pour le futur

Le grand problème de dénombrements se pose actuellement au Congo par le manque de spécialistes en la matière. On parlera beaucoup plus d'un désintéressement de l'administration de la faune. La formation des nouveaux Compteurs reste la grande préoccupation. Un appui dans ce sens de la part de Wetlands International est vivement souhaité.

Tableau 1: Récapitulatif des effectifs décomptés

Scientific name	French name	Total 2020
<i>Plectropterus gambensis</i>	Oie-armée de Gambie	10
<i>Sarkidiornis melanotos</i>	Canard à bosse	1
<i>Pteronetta hartlaubii</i>	Ptéronette de Hartlaub	17
<i>Zapornia flavirostra</i>	Marouette à bec jaune	1
<i>Leptoptilos crumenifer</i>	Marabout d'Afrique	38
<i>Mycteria ibis</i>	Tantale ibis	3
<i>Ciconia abdimii</i>	Cigogne d'Abdim	163
<i>Ciconia microscelis</i>	Cigogne épiscopale	86
<i>Bostrychia hagedash</i>	Ibis hagedash	4
<i>Nycticorax nycticorax</i>	Bihoreau gris	76
<i>Butorides striata</i>	Héron strié	13
<i>Bubulcus ibis</i>	Héron garde-boeufs	591
<i>Ardea cinerea</i>	Héron cendré	8
<i>Ardea purpurea</i>	Héron pourpré	2,166
<i>Ardea alba</i>	Grande Aigrette	199
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	135
<i>Egretta garzetta</i>	Aigrette garzette	56
<i>Scopus umbretta</i>	Ombrette africaine	32
<i>Microcarbo africanus</i>	Cormoran africain	694
<i>Anhinga rufa</i>	Anhinga d'Afrique	179
<i>Charadrius alexandrinus</i>	Pluvier à collier interrompu	17
<i>Vanellus albiceps</i>	Vanneau à tête blanche	19
<i>Actophilornis africanus</i>	Jacana à poitrine dorée	186
<i>Actitis hypoleucos</i>	Chevalier guignette	9
<i>Tringa ochropus</i>	Chevalier cul-blanc	1
<i>Tringa nebularia</i>	Chevalier aboyeur	12
<i>Tringa glareola</i>	Chevalier sylvain	32
<i>Glaucopis pratensis</i>	Glaréole à collier	29
<i>Rynchops flavirostris</i>	Bec-en-ciseaux d'Afrique	308
<i>Thalasseus maximus</i>	Sterne royale	500
<i>Pandion haliaetus</i>	Balbusard pêcheur	5
<i>Gypohierax angolensis</i>	Palmiste africain	48
<i>Circus aeruginosus</i>	Busard des roseaux	11
<i>Haliaeetus vocifer</i>	Pygargue vocifer	19
<i>Megaceryle maxima</i>	Martin-pêcheur géant	34
<i>Ceryle rudis</i>	Martin-pêcheur pie	241

Conclusion et recommandations

L'année 2020 a été caractérisée par la baisse des populations d'oiseaux au niveau du Bas-Kouilou, scénario qui s'est répété ces trois dernières années. On espère pour la saison prochaine une stabilisation des bacs de sable du site.

Notre grand souci reste celui des compteurs d'oiseaux qu'il faut former en priorité surtout que 2021 risque d'être ma dernière année au service des dénombrements. D'oiseaux.

Remerciements

Nos remerciements vont droit à SFI/Wetlands International, BirdLife International Afrique and WSFI, à l'équipe de WCS Lac Télé et à RENATURA.

ANNEXE

Liste des compteurs (observateurs)

Jérôme Mokoko Ikonga, Jean Claude BATCHY, Dylan Deffaux, Mabaya Séba, Mombongo Roger, Malouania Lydia, Elyon Vivien Marlus

32. République Démocratique du Congo (RDC)



Rapport de synthèse du Dé- nombrement International des Oiseaux d'Eau (DIOE) 2020, sur la côte atlantique de la RDC

Pierre Mavuemba Tuvi, Elisabeth
Muila Yalusila et Zacharie Lelo
Sambiandi
Enseignement supérieur et uni-
versitaire, Institut Supérieur de
Navigation et de Pêche (I.S.N.P.)



1. INTRODUCTION

Le présent dénombrement concerne les oiseaux d'eau ayant fréquenté les différents sites du Parc Marin des Mangroves, qui borde toute la côte atlantique de la République Démocratique du Congo

sur près de 35 km et les zones humides avoisinantes, au mois de Février 2020. Le comptage n'a pas pu se faire au mois de Janvier comme prévu annuellement, à cause de fortes précipitations qu'a connues la côte atlantique de la RDC, en cette période, généralement de petite saison sèche.

Objectifs

- Comptage visuel et réel des oiseaux d'eau du Parc Marin des Mangroves et ses environs.
- Relevé de l'état environnemental des sites parcourus.
- Relevés des coordonnées géographiques.
- Compilation et présentation des résultats du comptage.
- Elaboration du rapport synthèse.

2. METHODOLOGIE

Un atelier de pré-comptage a été organisé pour former des compteurs ; les exercer sur le comptage des oiseaux et sensibiliser les riverains sur l'importance du DIOE. Les sites retenus pour le comptage ont été parcourus par équipes. 2 véhicules « tout-terrain », 2 bateaux (canots hors-bord) et 4 pirogues ont été utilisés pour le déplacement dans les sites de comptage. Ensuite, les données ont été compilées afin de rédiger un rapport.



Figure 1: Localisation du Parc Marin des Mangroves en RDC.

Autres institutions, organisations ou associations impliquées dans le dénombrement :

- Parc Marin des Mangroves (PMM/ ICCN),
- Institut Supérieur de Navigation et de Pêche (ISNP/MUANDA),
- Association « Sauvons Nos Côtes » (SANO – ONGD),
- Compteurs indépendants.

3. RESULTATS DES COMPTAGES

Le total des oiseaux d'eaux dénombrés au cours du comptage de cette année 2020 est de 4.123 pour 53 espèces contre 3.978 oiseaux pour 47 espèces en 2019. Soit 145 oiseaux de plus. Cette légère augmentation n'est pas du tout significative par rapport à l'année 2019 où les compteurs ont parcouru moins d'étendues.

4. DISCUSSION

Des habitats détruits dans certains sites comme TOMPO, BULAMBEMBO et NGOYO auraient pu contenir encore plus d'oiseux que nous n'en avons dénombrés, s'ils étaient intacts. Les pluies diluviennes qui ont caractérisé cette période, habituellement de petite saison sèche, peuvent aussi être incriminées pour ces résultats que nous considérons faibles par rapport au travail abattu sur terrain. A cela il faut ajouter la présence humaine et l'urbanisation sans cesse croissante. Quant à l'augmentation du nombre d'espèces (6 de plus), il s'agit pour la plupart d'oiseaux endémiques et habituels qui n'ont simplement pas été croisés en 2019. Nous notons toutefois que cette année, nous n'avons pas pu observer le Héron goliath *Ardea goliath*, presque toujours présent à tous les comptages, bien qu'en solitaire. Le comptage de cette année aurait donc pu être plus fructueux si nous avions été mis dans les conditions climatiques naturelles de 2019. Toutefois, ce travail nous aiguise d'année en année et nous espérons de meilleurs résultats aux prochains dénombrements.

Site	Espèce	Total
Lagunes de NGOYO et de TONDE	38	729
Presqu'île de BANANA KM 5, KM 4, KM 3	15	437
Iles de TOMPO ET de BULAMBEMBO, îlots et bancs de sable	24	1052
Lagunes de TSHIENDE et plaines inondées de MALONGO	15	621
Marécages de LUKUNGA et île de MATEBA	24	1284

Menaces spécifiques pesant sur les sites

- Fréquentation de l'homme,
- Surpêche et pêche massacre,
- Déboisement et feux de brousses,
- Pollutions diverses : hydrocarbures, plastics, déchets d'élevage,
- Constructions anarchiques.

Difficultés rencontrées

- Accessibilité difficile à cause de larges distances entre les îlots et lagunes,
- Insuffisance de moyens matériels et financiers,
- Intempéries,
- Absence d'intérêt par les autorités et les communautés,
- Eparpillement des habitats (pas de grands regroupements d'oiseaux en un seul lieu).

Conclusion et recommandations

De manière générale, le DIOE 2020 s'est bien déroulé. Bien que prévu pour le mois de Janvier, il n'a pu se dérouler qu'au mois de février à cause des pluies diluviennes qui ont caractérisé cette période habituellement de petite saison sèche. Et à cause des grosses crues du fleuve Congo durant cette saison des pluies, le site de reproduction des Becs-en-ciseaux d'Afrique a totalement coulé sous les eaux. La petite île de KASADI a disparu. Les oiseaux se sont reportés sur l'île de NKAMANSOKI, en face. L'absence de moyen de locomotion propre (sur mer et sur terre : canot hors-bord de dix places et véhicule tout-terrain de dix places) limite le parcours des lagunes et

Tableau2 : Listes et effectifs des oiseaux d'eau dénombrés, par espèce

Scientific name	French name	Total 2020	Scientific name	French name	Total 2020
<i>Dendrocygna viduata</i>	Dendrocygne veuf	261	<i>Pluvialis squatarola</i>	Pluvier argenté	10
<i>Nettapus auritus</i>	Anserelle naine	118	<i>Charadrius hiaticula</i>	Pluvier grand-gravelot	5
<i>Tachybaptus ruficollis</i>	Grèbe castagneux	157	<i>Charadrius marginatus</i>	Pluvier à front blanc	7
<i>Zapornia flavirostra</i>	Marouette à bec jaune	15	<i>Vanellus albiceps</i>	Vanneau à tête blanche	6
<i>Porphyrio alleni</i>	Talève d'Allen	54	<i>Actophilornis africanus</i>	Jacana à poitrine dorée	257
<i>Ciconia microscelis</i>	Cigogne épiscopale	3	<i>Numenius phaeopus</i>	Courlis corlieu	299
<i>Platalea alba</i>	Spatule d'Afrique	5	<i>Calidris alba</i>	Bécasseau sanderling	7
<i>Nycticorax nycticorax</i>	Bihoreau gris	16	<i>Actitis hypoleucos</i>	Chevalier guignette	12
<i>Butorides striata</i>	Héron strié	106	<i>Tringa nebularia</i>	Chevalier aboyeur	39
<i>Ardeola ralloides</i>	Crabier chevelu	92	<i>Glaucopis pratincola</i>	Glaréole à collier	19
<i>Bubulcus ibis</i>	Héron garde-boeufs	805	<i>Glaucopis nuchalis</i>	Glaréole auréolée	116
<i>Ardea cinerea</i>	Héron cendré	1	<i>Glaucopis cinerea</i>	Glaréole grise	141
<i>Ardea melanocephala</i>	Héron mélanocéphale	2	<i>Rynchops flavirostris</i>	Bec-en-ciseaux d'Afrique	132
<i>Ardea purpurea</i>	Héron pourpré	43	<i>Larus cirrocephalus</i>	Mouette à tête grise	1
<i>Ardea alba</i>	Grande Aigrette	119	<i>Sternula albifrons</i>	Sterne naine	8
<i>Ardea brachyrhyncha</i>	Héron à bec jaune	14	<i>Chlidonias niger</i>	Guifette noire	110
<i>Egretta garzetta</i>	Aigrette garzette	239	<i>Sterna hirundo</i>	Sterne pierregarin	124
<i>Egretta gularis</i>	Aigrette à gorge blanche	1	<i>Thalasseus maximus</i>	Sterne royale	10
<i>Scopus umbretta</i>	Ombrette africaine	23	<i>Pandion haliaetus</i>	Balbusard pêcheur	7
<i>Microcarbo africanus</i>	Cormoran africain	194	<i>Gypohierax angolensis</i>	Palmiste africain	148
<i>Anhinga rufa</i>	Anhinga d'Afrique	73	<i>Ceryle rudis</i>	Martin-pêcheur pie	39
<i>Burhinus vermiculatus</i>	Oedicnème vermiculé	75			

des lacs qui regorgent pourtant de beaucoup de Grèbes, Anserelles, Jacanas, Râles, Dendrocygnes, etc.. Nous espérons toujours acquérir un appareil photographique plus performant pour les images. Une fois encore nous soulignons la grande difficulté de couvrir tous les sites de ce grand parc quasi-inondé. Il faut une prise de conscience des autorités nationales pour endiguer la destruction des sites et mettre les moyens nécessaires pour protéger les habitats. Aussi, faudra-t-il amener les responsables du PMM et du pays à s'impliquer dans les opérations de dénombrement des oiseaux d'eau en RDC.

Remerciements

Nous remercions Wetlands International et ses partenaires pour leur contribution financière et matérielle ; le Directeur du Parc Marin des Mangroves pour sa contribution matérielle et en personnel de terrain, et tous les gardes de parc ; SANOCO-ONGD, pour sa participation humaine, matérielle et financière ; tous les compteurs et les collègues de l'ISNP/MUANDA pour tous leurs

efforts dans l'accompagnement à la réalisation annuelle des activités de comptage ; tous les riverains du parc, pour leur disponibilité.

ANNEXE

Liste des compteurs et observateurs

Pierre Mavuemba Tuvi, Elisabeth Muila-Ya-Lusila, Pierrette Basolo Ngoma, Zacharie Lelo Sambiandi, Ngeli Payi, Jacques Diela Vanga, Celestin Buanga Maduka, Rodrigue Mandembo, Jacques Ngoyi Niati, Mbelembi Nzanga, David Angenda Mbuli, Mbuyi Mushignanyi, Guélor Konde Konde, César Lenda Eyombe, 7 étudiants

33. Angola



International Waterbird Census (iwc) total count 2020 in Angola

Filipe Kodo, José Dala, Miguel Xavier,
& Maria Eugênia
NGO Bioconserv
Conservation Areas (INBAC)



1. INTRODUCTION

Since 2016, waterfowl counting activities have become a regular activity in Angola. Water bird counts are an important tool and constitute an important action in the implementation of the national biodiversity strategy, with regard to strengthening knowledge and monitoring of Angolan coastal and marine biodiversity within the framework of the conventions and multilateral agreements signed by Angola on species of migratory birds and their habitats.

This year's 2020 water bird count was coordinated by the NGO BIOCONSERV with institutional support from the National Institute of Biodiversity and Conservation Areas (INBAC), and was attended

by an international volunteer, Martin Poot, an ornithologist from the Netherlands. Angola has an extensive coastline of 1650 km, from the region of Cabinda (northern Angola) up to the mouth of the Cunene River (southern Angola). In 2020 the counts took place in the provinces of Luanda, Zaire and Namibe (figure 1).

Objectives

- Proceed the monitoring of water birds along the Angolan coast;
- Increase the coverage of coastal wetlands, including the locations of Soyo and Nzeto;
- Record human threats to birds and their habitats in the selected areas.

2. METHODOLOGY

The counting activities were concentrated in previously selected locations. Groups of observers were distributed to the counting sites. Each constituted group had the responsibility to carry out the counting in determined fixed areas, covering the areas by using cars, motor boats and on foot covering in this way up to many tens of kilometers.

Others institutions, organizations or associations involved:

- National Institute for Biodiversity and Conservation Areas (INBAC),
- National Museum of Natural History.

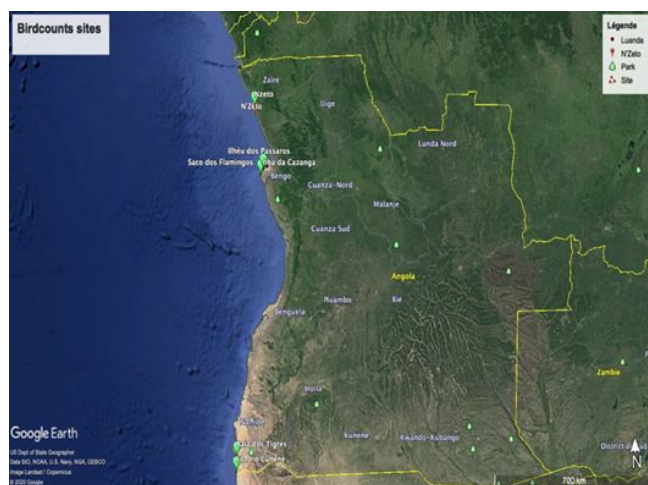


Figure 1: Map with the locations of the surveyed areas.

3. RESULTS

In total, including the provinces of Luanda, Namibe and Zaïre, 122,706 bird individuals were counted, classified into 60 species, of which *Phalacrocorax capensis* was the species that registered the largest number of individuals with a total of 109,300 individuals, of which 109,275 were registered in Foz do Rio Cunene, province of Namibe.

In the 2020 counts, 12 species were recorded that were not included in the previous 2017 surveys, some such as *Glareola nordmanni*, *Thalasseus albidorsalis*, *Pelecanus rufescens*, *Larus fuscus*, *Halcyon leucocephala*, etc.

The greatest diversity of species was recorded in the Integral Nature Reserve of Ilhéu dos Pássaros, with 28 species. In Luanda, the species *Phoenicopeterus roseus* (Common Flamingo) had the largest number of individuals, with a total of 670 and in second place was the species *Calidris minuta* (Little stint) with 642 individuals.

During the 3 days of counting in the province of Luanda, 46 species of water birds were identified, in a total of 3,790 individuals. Compared to previous counts, in 2017 Luanda had a record of 3,854 individuals. However, it is important to note that the province of Luanda has undergone a new administrative division in recent years, an important part of the northern coastal area, such as the Santiago beach that was once attached to Luanda, currently part of the neighbouring Bengo province, i.e. in 2017, Santiago beach and Panguila surroundings were counted as areas belonging to Luanda. The largest number of individuals was registered in the Saco dos Flamíngos wetland, 1,955 individuals.

4. DISCUSSION

Specific threats to sites

Luanda is the place where the greatest degradation of the environment takes place due to human pressure. The biggest concern was in the Integral Nature Reserve of Ilhéu dos Pássaros, which, in addition to the pressures already known as the presence of some families of Mabangas and fisherman, shellfish collectors and solid waste, acts of infrastructure vandalism was notified, such as the birds, the Reserve's sign and remains of dead birds were found, the causes of which have not been identified, but everything indicates that it is related to human activities. In Saco dos flamingos, threats of land occupation for buildings tend to increase every year. In other parts of Luanda Bay more developments take place, especially the development of large touristic resorts and land reclamation for the same purpose. These developments take place in areas which are not monitored on biodiversity including waterbirds.

Difficulties encountered, quality and coverage of the count

According to the project prepared for the counting of waterfowl this year, it was planned to cover 7 coastal provinces, namely Luanda, Bengo, Cabinda, Zaïre, Cabinda, Benguela and Namibe. The counts only took place in the provinces of Luanda, Zaïre and Namibe. In the last two provinces, the counts were incomplete due to the tragic accident that occurred with the counting team in Namibe, who in an attempt to cross the Curoca River were dragged by the currents of water. The incident victimized the drowning death of one of the team members, Dra Maria Eugênia Lopes and there was also the loss of a Land Cruiser 4x4 vehicle and field materials to count, laptops, telescope, binoculars

Table 1: Results of the counts

Scientific name	English name	Total 2020
<i>Alopochen aegyptiaca</i>	Egyptian Goose	11
<i>Anas capensis</i>	Cape Teal	3
<i>Anas erythrorhyncha</i>	Red-billed Teal	1
<i>Phoenicopterus roseus</i>	Greater Flamingo	2,629
<i>Phoeniconaias minor</i>	Lesser Flamingo	80
<i>Mycteria ibis</i>	Yellow-billed Stork	1
<i>Anastomus lamelligerus</i>	African Openbill	6
<i>Platalea alba</i>	African Spoonbill	14
<i>Threskiornis aethiopicus</i>	African Sacred Ibis	17
<i>Butorides striata</i>	Green-backed Heron	2
<i>Ardea cinerea</i>	Grey Heron	78
<i>Ardea alba</i>	Great White Egret	1
<i>Egretta ardesiaca</i>	Black Heron	25
<i>Egretta garzetta</i>	Little Egret	313
<i>Pelecanus rufescens</i>	Pink-backed Pelican	1
<i>Pelecanus onocrotalus</i>	Great White Pelican	227
<i>Microcarbo africanus</i>	Long-tailed Cormorant	121
<i>Phalacrocorax carbo</i>	Great Cormorant	248
<i>Phalacrocorax capensis</i>	Cape Cormorant	109,300
<i>Burhinus vermiculatus</i>	Water Thick-knee	1
<i>Recurvirostra avosetta</i>	Pied Avocet	3
<i>Himantopus himantopus</i>	Black-winged Stilt	2
<i>Pluvialis squatarola</i>	Grey Plover	45
<i>Charadrius hiaticula</i>	Common Ringed Plover	337
<i>Charadrius pecuarius</i>	Kittlitz's Plover	12
<i>Charadrius marginatus</i>	White-fronted Plover	28
<i>Numenius phaeopus</i>	Whimbrel	62

and other materials for personal use. After the incident both teams stopped the counting activities for other priorities.

Improvements and learning points for the future

It is expected in the next counts to reach the area of Baia dos Tigres in Namibe. Baia dos Tigres is one of the very important places considering its avifaunistic wealth in exceptional large numbers of birds, and also hosting endangered species. It is an area classified as an IBA under the Benguela Current Convention. In the last two counts, it was not possible to have access to this location due to the lack of a vessel. For future missions, we will investigate the possibilities e.g. on collaborating with the Academy of Fisheries and Sea Sciences based in Namibe, which with its means and vessel can be an asset to carry out counts in this area.

Conclusion and Recommendations

Despite the constraints, the results of the counts carried out this year are very encouraging, both in Luanda and in the other provinces where preliminary counts were made. There were more than

Scientific name	English name	Total 2020
<i>Numenius arquata</i>	Eurasian Curlew	18
<i>Limosa lapponica</i>	Bar-tailed Godwit	46
<i>Arenaria interpres</i>	Ruddy Turnstone	10
<i>Calidris canutus</i>	Red Knot	2
<i>Calidris pugnax</i>	Ruff	1
<i>Calidris ferruginea</i>	Curlew Sandpiper	138
<i>Calidris alba</i>	Sanderling	2,004
<i>Calidris minuta</i>	Little Stint	657
<i>Actitis hypoleucos</i>	Common Sandpiper	3
<i>Tringa nebularia</i>	Common Greenshank	184
<i>Tringa totanus</i>	Common Redshank	3
<i>Tringa stagnatilis</i>	Marsh Sandpiper	55
<i>Larus cirrocephalus</i>	Grey-headed Gull	2
<i>Larus dominicanus</i>	Kelp Gull	31
<i>Larus fuscus</i>	Lesser Black-backed Gull	36
<i>Sternula balaenarum</i>	Damara Tern	236
<i>Gelochelidon nilotica</i>	Common Gull-billed Tern	27
<i>Hydroprogne caspia</i>	Caspian Tern	30
<i>Sterna hirundo</i>	Common Tern	55
<i>Thalasseus sandvicensis</i>	Sandwich Tern	249
<i>Thalasseus maximus</i>	Royal Tern	704
<i>Thalasseus bergii</i>	Greater Crested Tern	600
<i>Pandion haliaetus</i>	Osprey	7
<i>Gypohierax angolensis</i>	Palm-nut Vulture	19
<i>Megaceryle maxima</i>	Giant Kingfisher	2
<i>Ceryle rudis</i>	Pied Kingfisher	1

a dozen species that had not been seen in counts before and it also allowed the reinforcement of a network of observers made up mostly of young students from the Universities. In 2017 for Luanda, a total of 44 species were counted, while in the 2020 counts, 60 species were identified in Luanda. Preliminary counts were carried out for the first time in the province of Zaire, specifically in the municipality of Nzeto. That in the next counts the Soyo region in the province of Zaire and the Baia dos Tigres in Namibe are priority and working conditions on the ground are reinforced to avoid incidents.

Acknowledgements

We would like to start by thanking Wetlands International, Wadden Sea Flyway Initiative and BirdLife International for the financial and material support that allowed us to count the waterfowl count of 2020 that covered 3 provinces along the Angolan coast, the National Institute of Biodiversity and Conservation Areas for the logistical support. We would like also to thank the ornithologist Martin Poot, international volunteer who participated in the counts in Luanda and Namibe,

his knowledge was valuable for BIOCONSERV.

Our sincere thanks go to all the members of the BIOCONSERV Association who, in a spirit of volunteering and with hands on conservation, gave their support in these counts and to Mr. Inhala Domingos from the Environment Department of the Province of Zaire.

ANNEX

List of counters (observers)

José Dala, Maria Eugênia, Filipe Kodo, Miguel Xavier, Martin Poot, Elizângela António, José Dianguessa, Petra de Andrade, Nádia Madeira, Luisa Ester, Isilda Cavaleca, Ticiane Rocha, Isabel Catumbela, Estefania Manuel, Cláudio Agostinho, Sango de Sá, Vânia Fernandes, Marinela Malu Inhala Domingos

Tribute to Dr Maria Eugenia Lopes

We especially want to acknowledge the presence of Dr. Maria Eugenia Lopes (in memory) who died in an accident while participating in the 2020 countings. She was volunteer, vice president, co-founder of BIOCONSERV and researcher at the National Museum of Natural History. Unfortunately we will no longer be able to count on the physical presence of Dr Maria Eugênia Lopes (Mana Geny) in future counts, but her legacy and passion for the protection of resident and migratory water birds and their habitats will continue to be present in our lives and will serve as motivation for the future missions.



Maria Eugênia Lopes, Tômbwa, 31 January 2020.

34. Namibia



International Waterbird Census (IWC) total count 2020 in Namibia.

Holger Kolberg
Ministry of Environment, Forestry and
Tourism



1. INTRODUCTION

Namibia is the driest country south of the Sahara and is probably better known for the Namib Desert, part of which is a world heritage site, than its wetlands. Not surprisingly, any habitat that includes water thus takes on a significant role, providing water and food in an otherwise hostile environment.

2. METHODS

Counts were conducted at 38 sites (see table 1). These can be divided into three broad areas: coast, inland man-made wetlands and inland north-eastern wetlands.

- The coastal sites include two wetlands of international importance, Sandwich Harbour and Walvis Bay. The Lüderitz peninsula comprises nine sites, each counted separately.
- A number of man-made wetlands in or near Windhoek are counted and the other ones covered are medium to large impoundments built mainly for water supply to nearby towns.
- The areas counted in the North East are all on perennial rivers, viz. the Okavango, Zambezi, Chobe and Kwando, except for the Tsumkwe "pan-netjiesveld", a series of pans that only fill up if sufficient rain has fallen.

All sites are counted on foot or, in the case of the large rivers in the North East, by boat. The only exception is Sandwich Harbour where a quadbike is used to count the vast mudflats on the southern end of the site. Wherever possible, total counts are made, large flocks are estimated to the nearest hundred.

3. RESULTS

264 387 birds of 98 species were counted (Table 2). As usual, the two big coastal sites, Walvis Bay and Sandwich Harbour, dominated in terms of numbers

Table 1: Counting sites

Coast	Inland Man-made	North East
Cape cross	Hardap Dam	Hakusembe
Walvis bay ram-sar site	Naute Dam	Caprivi House Boat Safaris (CHBS)
Walvis bay sewage works	Van Rhyn Dam	Mubala
Sandwich harbour	Otjivero Dam	Chobe River
Swakop river mouth	Avis Dam	Namushasha
Swakop sewage works	Daan Viljoen GP	Baraka Pan
Grosse bucht	Goreangab Dam	Gautscha Pan
Guano bay	Hoffnung Dam	Groot Dobe
Shearwater bay	Monte Christo	Khabi Pan
Griffith bay	Windhoek Water Care Works	Klein Dobe
Second lagoon		Makuri Vlei
Radford bay		Nyae Nyae Pan
Aeroplane bay		Tjokwe Pan
Lüderitz sewage works		
Agate beach		

(Figure 1) and Walvis Bay also takes the honours in the number of species recorded. Nineteen (out of 33) red data species were recorded with the two flamingo species taking top spot in that category. Very few Black-necked Grebes, Lesser Flamingos and Chestnut-banded Plovers were counted; this is probably due to some rain having fallen inland, attracting the birds away from the coast. Figure 2 gives the yearly fluctuations in counted numbers of Flamingo's, Waders and Gulls, Terns and Skimmers. The counting effort between 2010 and 2020 is comparable.

4. DISCUSSION

The effect of the worst drought in recorded history (no significant rainfall in eight years!) is evident in the number of zero counts as many places were completely dry at the time of the counts. Funding and man-power remain the two main constraints to achieve comprehensive coverage of the country. Many important areas e.g. the Etosha Pan and areas to the north thereof are not counted.

Acknowledgements

The author is indebted to many sponsors whose support (financial and in kind) makes these counts possible. The counts would not be possible without the participation of volunteers; many of them are members of the Namibia Bird Club (www.na-

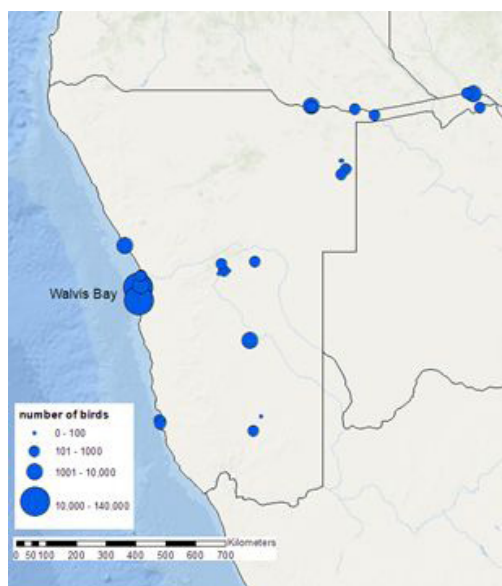


Figure 1 Total numbers of waterbirds at counted sites



Figure 2: Numbers of three main groups counted from 2010 to 2020

mibiabirdclub.org). The Coastal Environment Trust of Namibia (CETN) makes all the arrangements for, and coordinates the count at Walvis Bay.

Table 2: Totals per species counted in 2020

Scientific name	English name	Total 2020
<i>Tadorna cana</i>	South African Shelduck	20
<i>Spatula smithii</i>	Cape Shoveler	4
<i>Anas capensis</i>	Cape Teal	701
<i>Anas erythrorhyncha</i>	Red-billed Teal	2
<i>Tachybaptus ruficollis</i>	Little Grebe	13
<i>Podiceps nigricollis</i>	Black-necked Grebe	896
<i>Phoenicopterus roseus</i>	Greater Flamingo	85,306
<i>Phoeniconaias minor</i>	Lesser Flamingo	14,113
<i>Porphyrio porphyrio</i>	Purple Swamphen	2
<i>Gallinula chloropus</i>	Common Moorhen	27
<i>Fulica cristata</i>	Red-knobbed Coot	44
<i>Bubulcus ibis</i>	Cattle Egret	3
<i>Ardea cinerea</i>	Grey Heron	75
<i>Egretta garzetta</i>	Little Egret	128
<i>Pelecanus onocrotalus</i>	Great White Pelican	1,551
<i>Microcarbo coronatus</i>	Crowned Cormorant	20
<i>Phalacrocorax carbo</i>	Great Cormorant	244
<i>Phalacrocorax capensis</i>	Cape Cormorant	8,370
<i>Phalacrocorax ne-glectus</i>	Bank Cormorant	2
<i>Haematopus moquini</i>	African Oystercatcher	117
<i>Recurvirostra avosetta</i>	Pied Avocet	2,394
<i>Himantopus himantopus</i>	Black-winged Stilt	635
<i>Pluvialis squatarola</i>	Grey Plover	1,646
<i>Charadrius hiaticula</i>	Common Ringed Plover	455
<i>Charadrius pecuarius</i>	Kittlitz's Plover	7
<i>Charadrius tricollaris</i>	African Three-banded Plover	37

Scientific name	English name	Total 2020
<i>Charadrius marginatus</i>	White-fronted Plover	3,669
<i>Charadrius pallidus</i>	Chestnut-banded Plover	388
<i>Vanellus armatus</i>	Blacksmith Lapwing	13
<i>Vanellus senegallus</i>	Wattled Lapwing	1
<i>Numenius phaeopus</i>	Whimbrel	248
<i>Numenius arquata</i>	Eurasian Curlew	73
<i>Limosa lapponica</i>	Bar-tailed Godwit	1,509
<i>Arenaria interpres</i>	Ruddy Turnstone	521
<i>Calidris pugnax</i>	Ruff	148
<i>Calidris ferruginea</i>	Curlew Sandpiper	40,467
<i>Calidris alba</i>	Sanderling	3,199
<i>Calidris minuta</i>	Little Stint	1,974
<i>Actitis hypoleucos</i>	Common Sandpiper	2
<i>Tringa nebularia</i>	Common Greenshank	341
<i>Tringa glareola</i>	Wood Sandpiper	1
<i>Tringa stagnatilis</i>	Marsh Sandpiper	4
<i>Larus hartlaubii</i>	Hartlaub's Gull	1,158
<i>Larus cirrocephalus</i>	Grey-headed Gull	3
<i>Larus dominicanus</i>	Kelp Gull	2,787
<i>Sternula balaenarum</i>	Damara Tern	265
<i>Hydroprogne caspia</i>	Caspian Tern	139
<i>Chlidonias leucopterus</i>	White-winged Tern	167
<i>Chlidonias niger</i>	Black Tern	259
<i>Sterna hirundo</i>	Common Tern	40,676
<i>Thalasseus sandvicensis</i>	Sandwich Tern	2,783
<i>Thalasseus bergii</i>	Greater Crested Tern	705

35. Discussion

This report summarizes the national results of the simultaneous 'coastal' waterbird and wetlands census of January 2020 from the countries along the East Atlantic Flyway. In this final chapter we will briefly discuss and summarize some of the results in respect of numbers counted, the environmental data collected and the quality and completeness of the surveys. We would like to stress that this report is mainly meant as a basic description of the work carried out and results obtained. It will function as preliminary feed-back to organisations and observers involved, to the funders of the activities, both national and international and will be the basis for further analyses and reporting. The counted numbers mentioned in this report can therefore not be considered as the final estimates for total numbers or trends at site or regional level. In the course of 2021 a full analysis of the results will be carried out, resulting in a new flyway assessment report with updated estimates, as was prepared for the simultaneous count of 2017 (van Roomen et al. 2018).

Participation and coverage

The East Atlantic Flyway does not have strictly defined boundaries. We are especially focussing on coastal populations during the non-breeding season in all countries along the flyway bordering the Atlantic Ocean, North Sea and Baltic Sea. Mind that for some species these populations can cover large areas of inland habitat during the breeding season. However, in the non-breeding period many of them concentrate on coastal sites. In the northern and northeastern parts of the Flyway winter distribution, boundaries are defined by the edge of ice cover. This range is moving northward because of global warming. In the south the focus is especially on the (tidal) wetlands up to Cape Good Hope in South Africa. Also several inland sites are included. This geographical region consists of 40 countries, of which 32 present their national results in this report. In another five countries count data have also been collected (Poland, Ireland, Spain, South Africa and Iceland), but due to various reasons no description is included in this report. In the three countries without data (Cape Verde, Equatorial Guinea and Togo) important numbers of waterbirds do not occur, although we would welcome future participation. For most countries data from 2020 is used, although for a few the most recent data currently available is from 2019. We would like to stress that in the final trend analyses all count data will be analysed up to 2020. For some East Atlantic flyway

populations this will also include more inland countries. Some countries, especially in Africa, are concentrating on their coastal wetlands as part of this East Atlantic Flyway cooperation. These have however also far inland wetlands and flood plains in the Sahelian region, that contain substantial waterbird numbers in midwinter, and which could be covered if additional resources could be found (for instance in Ghana, Nigeria and Cameroon). This was already achieved over the past years in Benin and Senegal.

Each country is represented by a national coordinator for the International Waterbird Census and these persons were also involved as the principal organizers for this flyway count, as they are positioned at crucial positions in national monitoring and research organisations, governmental institutes or BirdLife partners. In total, these national organizers coordinated the efforts of more than 12,000 observers, unevenly distributed over Europe (11,000) and Africa (1,000). This striking difference reflects the availability of human resources rather than the size of waterbird populations. The limited number of observers in Africa is largely compensated by their longer involvement in the count: most of them are contributing for 7-10 days in a row, to cover all sites needed. This requires another form of organization in Africa than in Europe.

Waterbird monitoring

Within the entire East-Atlantic Flyway more than 250 waterbird species have been encountered in total, belonging to the (sub)families of Swans, Geese, Ducks, Grebes, Flamingo's, Rails, Cranes, Storks, Spoonbills, Ibises, Herons, Pelicans, Cormorants, Waders, Gulls and Terns. Many of the species do not occur primarily along the coast, but are more inland oriented or more pelagic, although good numbers also occur at the coastal sites. Of the 95 coastal East Atlantic Flyway focal species, over 14 million birds have been counted in total. Including all 250 waterbird species this number reaches almost 20 million. The real number of birds present is actually higher, since in several countries counts are incomplete. This is especially the case in countries with extensive mangroves along the coast, which are generally not accessible (for instance in Senegal, Guinea Bissau, Guinea, Sierra Leone, Nigeria and Gabon). Here, extrapolation from counts at sample sites need to be made in order to estimate the total numbers present. Also, in most countries not all coastal wetlands could be visited due to lack of man power. In some northern countries transect counts at sea

from planes or boats need to be extrapolated to generate total estimates. These extrapolations and imputations for sites that were not (fully) covered have not been carried out yet, and are therefore not included in the totals reported here. Based on counted numbers only, the results include 1,3 million European Wigeons, 250,000 European Shelducks, 500,000 Common Teals, 23,000 Greater Flamingos, 23,000 European Spoonbills, 25,000 Great White Pelicans, 280,000 Great Cormorants, 91,000 Pied Avocets, 475,000 Red Knots, more than 2 million Dunlins, 1800 African Skimmers, 8500 Little Terns and 57,000 Common Terns. Also, 1,600 Ospreys and 2,800 Kingfishers, belonging to five different species, were counted.

Environmental monitoring

During the 2020 survey along the East Atlantic Flyway, standardized registration of environmental factors, human disturbance and resulting pressures on the coastal wetlands and waterbirds were included in the monitoring protocol as well. This was done by filling in standard forms based on observations during the count and expert knowledge of the sites for the most important wetlands visited. At present this information has been received for 110 sites along the flyway, more than the 73 sites for which we received information in 2017. So, the response to collect these data is increasing, both in Africa and Europe. However, the response rate in Europe is still much lower than in Africa. This information needs to be analysed first before we can give an useful overview, although for several countries the main pressures observed are described in the texts. The effects of global warming are increasingly mentioned, mainly regarding sea level rise which causes coast erosion and decreased availability of both foraging and breeding habitat. Also, the effects of temperature increases on the functioning of the food web through a wide range of mechanisms is mentioned. In northern Europe however, climate change is making new habitat available at the moment, in areas that were completely frozen during winter before. Analysing which populations are able to cope with this pressure by changing their distribution and/or other behavioural responses, and which are not, will be important for future study. For particularly the second group it is necessary to formulate effective conservation options to increase their resilience. One option is to reduce the other pressures operating at site level. The environmental monitoring can help to achieve this, since it gives information on a wide range

of human pressures. These include overfishing, overhunting, disturbance by tourism, water quality issues through all forms of pollution, extraction of sand or other materials, habitat change through expansion of harbours, human settlements and agriculture, environmental risks coming from oil/gas mining and wind farms. In many sites formal protection and adaptive management to safeguard ecosystem functions, including biodiversity, are still lacking or far from optimal.

Quality and completeness of the surveys

The January 2020 count was the third simultaneous survey of all waterbirds along the coastal East Atlantic Flyway. It was organized as a cooperation between national governments, national NGO's and the Wadden Sea Flyway Initiative, Wetlands International and BirdLife International. Earlier surveys were organized in 2014 and 2017. These total counts are an important part of the overall monitoring strategy of the East Atlantic Flyway, which otherwise consists of annual sample counts in Africa. During January 2020 we had a good mixture of less and more experienced observers in the most important countries in Africa, which generally resulted in high quality results. In Europe the largest remaining challenge is to speed up the availability of results. Nevertheless, with the help of many committed people, we have achieved a more complete, robust and reliable overall result than ever before, which will be used for further trend analyses of waterbird populations along the East Atlantic Flyway.



**Simultaneous January 2020 waterbird and
wetland census along the East Atlantic Flyway:
National Reports**

