

**SCOPING AND ENVIRONMENTAL IMPACT REPORTING PROCESS FOR THE
DEVELOPMENT OF NEW BERTH 605 AND ASSOCIATED INFRASTRUCTURE TO
SUPPORT THE CONTAINER HANDLING FACILITY, PORT OF RICHARDS BAY,
KWAZULU-NATAL**

SPECIALIST AVIFAUNAL IMPACT ASSESSMENT



A Blue-cheeked Bee-eater photographed on 29 Nov. 2024 at the proposed Berth 605 project site at Richards Bay harbour.

Applicant:



Prepared for:



WSP Group Africa (Pty) Ltd

Prepared by:



David G. Allan

20 Roosevelt Road, Padfield Park, Pinetown 3610
Email: ovampensis1958@gmail.com; Cell: 082-3610261

16 April 2025, revised 30 April and 19 May 2025

SCOPING AND ENVIRONMENTAL IMPACT REPORTING PROCESS FOR THE DEVELOPMENT OF NEW BERTH 605 AND ASSOCIATED INFRASTRUCTURE TO SUPPORT THE CONTAINER HANDLING FACILITY, PORT OF RICHARDS BAY, KWAZULU-NATAL

SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

CONTENTS

EXECUTIVE SUMMARY.....	7
1 INTRODUCTION - BERTH 605 PROJECT COMPONENTS	9
2 TERMS OF REFERENCE AND THE PROJECT AREAS OF INFLUENCE (PAOI)	11
3 DESCRIPTION OF THE BASELINE ENVIRONMENT	13
3.1 Secondary woodland and grassland	14
3.2 Open water	15
3.3 Mangroves	15
3.4 Shorelines	17
3.5 Anthropogenically transformed areas.....	17
3.6 Sand-spit island.....	20
3.7 Inter-tidal mudflats.....	22
4 AVIFAUNAL ASSESSMENT METHODOLOGY	22
4.1. Existing baseline avifaunal information	23
4.1.1 National Environmental Site Screening Tool.....	23
4.1.2 Southern African Bird Atlas Project 2	23
4.1.3 Existing waterbird count information	23
4.1.4 Important Bird and Biodiversity Areas	25
4.2 Field surveys of the Berth 605 project area	25
4.2.1 Bird common and scientific names and species ordering	25
4.2.2 Avifaunal field surveys of the Berth 605 project area	25
4.2.2.1 Avifaunal species lists	25
4.2.2.2 Waterbird counts.....	25
4.2.2.3 Red Data species.....	26
4.2.2.4 GPS tracks	26
5 ASSESSMENT OF THE AVIFAUNA OF THE BERTH 605 PROJECT AREA	26
5.1 Existing baseline avifaunal information	26
5.1.1 National Environmental Site Screening Tool	26
5.1.2 Southern African Bird Atlas Project 2	27
5.1.3 Existing waterbird count information	27

5.1.4 Important Bird and Biodiversity Areas	27
5.2 Avifaunal field surveys of the Berth 605 project area	28
5.2.2.1 Avifaunal species lists	28
5.2.2.2 Waterbird count	28
6 SAND-SPIT ISLAND ROOST SITE AND KABELJOU FLATS INTERTIDAL MUDFLAT FORAGING AREA	29
6.1 Existing baseline avifaunal information	29
6.1.1 Sand-spit island roost site.....	30
6.1.2 Kabeljou Flats intertidal mudflat foraging area.....	31
6.2 Avifaunal field surveys of the Berth 605 project area	32
6.2.1 Sand-spit Island roost site	32
6.2.2 Kabeljou Flats intertidal mudflat foraging area.....	32
7 RED DATA SPECIES.....	32
7.1 Existing baseline avifaunal information	32
7.2 Avifaunal field surveys of the Berth 605 project area	35
8 STUDY LIMITATIONS, INCLUDING ASSUMPTIONS AND UNCERTAINTIES/GAPS IN KNOWLEDGE	37
9 POTENTIAL IMPACTS OF THE BERTH 605 DEVELOPMENT ON THE AVIFAUNA	38
9.1 Terrestrial avifaunal habitats.....	38
9.2 Aquatic avifaunal habitats	38
9.2.1 Mangrove patch and intertidal mudflat	38
9.2.2 Shorelines	39
9.2.3 Sand-spit Island	39
9.2.4 Kabeljou Flats	40
9.3 Cumulative impacts	40
10 MITIGATION MEASURES.....	41
10.1 Terrestrial avifaunal habitats.....	41
10.2 Aquatic avifaunal habitats	41
10.2.1 Mangrove patch and intertidal mudflat	41
10.2.2 Shorelines	42
10.2.3 Sand-spit Island	43
10.2.4 Kabeljou Flats	43
10.3 Cumulative impacts	43
11 IMPACT ASSESSMENT TABLES	43
12 CONCLUSIONS AND REASONED OPINION	48
13 REFERENCES.....	49
14 SPECIALIST DECLARATION	51
14.1 Details of the avian specialist – David G. Allan.....	51
14.2 Specialist Declaration of Independence - David G. Allan	52

TABLES

Table 1. Details of the six existing sources of waterbird count information from the PAOI (Richards Bay harbour area).....	24
Table 2. The 16 sensitive species identified by the National Environmental Site Screening Tool in the Berth 605 project area.	26
Table 3. Counts of waterbird species from the six sources of waterbird-count information.	27
Table 4. Results of the low-tide waterbird count on 3 December 2024 along the shoreline of the Berth 605 project area and looking out across to the Sand-spit Island and Kabeljou Flats.....	29
Table 5. Numbers of waterbirds counted at the Sand-spit Island roost site in 2001 (Allan & McInnes 2002), Dec. 2008 (Allan 2009), 2022-2023 (Anchor Environmental Consultants & The Biodiversity Company 2023) and during this assessment (2025).....	30
Table 6. Numbers of waterbirds counted at the Kabeljou Flats inter-tidal mudflats foraging site in 2001 (Allan & McInnes 2002), Dec. 2008 (Allan 2009) and 2022-2023 (Anchor Environmental Consultants & The Biodiversity Company 2023).....	31
Table 7. Details of the 29 Red Data species recorded during SABAP2 in the two pentads relevant to the Berth 605 Project Areas of Influence (PAOI)	33
Table 8. Details of the 22 Red Data species recorded during the waterbird counts made by the six sources described above relevant to the Berth 605 Project Areas of Influence (PAOI).....	34
Table 9. Details of all records of the six Red Data bird species encountered during the field surveys.	35
Table 10. Impact assessment tables relevant to the Berth 605 project for the five identified potential impacts to avifauna considered separately for the construction, operational and decommissioning phases, as well as relevant to cumulative impacts in the Port of Richards Bay generally related to some 17 other planned initiatives in the harbour area.	45

FIGURES

Fig. 1. A close-up view of the project components of the Berth 605 project (as provided by WSP).	10
Fig. 2. The position of the Berth 605 project area relative to the broader Richards Bay harbour area.	10
Fig. 3. The Berth 605 PAOI (red line), essentially encompassing Richards Bay harbour.....	12
Fig. 4. Historic imagery (as provided by WSP) from 2006 of the Berth 605 project area showing the highly disturbed nature of the site.	13
Fig. 5. Key natural avifaunal habitats, as well as currently transformed areas, in and around the Berth 605 project area.	14
Fig. 6. Secondary woodland and grassland typical of large areas of the Berth 605 project footprint and adjacent areas.	15
Fig. 7. Open-water areas of Richards Bay harbour with the Berth 605 project area visible in the background.	15
Fig. 8. The mangrove stand located within the Berth 605 project footprint.	16
Fig. 9. The pipeline apparently allowing tidal flow between the mangrove stand in the Berth 605 project footprint and the harbour.	16
Fig. 10. View of the fairly natural shorelines in the Berth 605 project footprint.	17
Fig. 11. Highly transformed areas typical of parts of the Berth 605 project footprint and some surrounding areas.	18
Fig. 12. A coal-truck driving along a dirt road with a highly uneven and dusty surface close to the Berth 605 project area.	19

Fig. 13. Coal and other dust associated with heavy truck traffic in the Berth 605 project area under strong-wind conditions.	19
Fig. 14. Pied Crows from the Berth 605 project area showing black coal-dust staining on the white areas of their plumage (two birds on the right) compared with Pied Crows from other parts of KwaZulu-Natal (two birds on the left).	20
Fig. 15. View of the Sand-spit Island from across the channel separating it from the mainland looking east.	21
Fig. 16. View of the Sand-spit Island at low tide taken from the eastern side of the island looking west towards the Berth 605 project area in the background.	21
Fig. 17. A make-shift human encampment likely used by illegal gill-netting trespassers found on the Sand-spit Island on 22 Jan. 2025.	22
Fig. 18. View over the Kabeljou Flats intertidal mudflat at low tide.	22
Fig. 19. The two SABAP2 pentads (green lines) covering the Berth 605 Project Areas of Influence (PAOI – see Section 2; red lines). The various Berth 605 project components are also depicted.	23
Fig. 20. The 12 sections (white lines) in the PAOI (red lines) covered by the sixth source (Anchor Environmental Consultants & The Biodiversity Company 2023) in Table 1.	24
Fig. 21. The route tracks travelled on foot, by vehicle and by boat during the fieldwork for this assessment as recorded using a Garmin eTrex 10 GPS device.	26
Fig. 22. The Richards Bay Game Reserve sub-regional Important Bird and Biodiversity Area (IBA, green lines) relative to the Berth 605 PAOI (red lines).	28
Fig. 23. Water Thick-knee (left) and Eurasian Whimbrel (right) photographed during the 3 Dec. waterbird count along the shoreline in the Berth 605 project area.	29
Fig. 24. The Sand-spit Island roost site and Kabeljou Flats inter-tidal mudflat foraging area close to the Berth 605 development site.	30
Fig. 25. Greater Sand Plover (left) and Lesser Crested Tern (right) at the Sand-spit Island during the 22 Jan. 2025 waterbird count.	32
Fig. 26. Pink-backed Pelican (left) and Great White Pelican (right), both Red Data species.	36
Fig. 27. Grey Plover (left) and Bar-tailed Godwit (right), both Red Data species.	36
Fig. 28. Pink-backed Pelicans on the tall light mast used for breeding on 3 Dec. 2024.	37
Fig. 29. The Berth 605 project footprint showing: 1 - the artificially-created mangrove patch encircling an intertidal mudflat and 2 – the extent of semi-natural shoreline.	39
Fig. 30. Overview of proposed future initiatives in the Port of Richards Bay.	40
Fig. 31. Possible area for potential offsetting to compensate for residual impacts of Berth 605 development on the mangrove/intertidal patch and fairly natural shorelines.	42

APPENDICES

Appendix 1. Details of the 362 bird species recorded in the two Southern African Bird Atlas Project 2 (SABAP2) pentads containing the Berth 605 Project Areas of Influence (PAOI, 2845_3200 and 2845_3205) as taken from 1390 bird checklists submitted for these two pentads combined. The data are presented separately for 'Full Protocol' and 'Ad hoc' checklists and reflect both reporting ('Rep.') rates and the total number of records for each of these two checklist types. Also listed are the 108 species recorded during field surveys for this assessment.	53
Appendix 2. Details of all waterbirds counted during all six of the sources of waterbird-count information from the Berth 605 Project Areas of Influence (PAOI, i.e. Richards Bay harbour). Also identified the relevant	

thresholds qualifying sites for regional and global Important Bird and Biodiversity Area (IBA) status and Ramsar status where these are available.....	59
Appendix 3. The 108 bird species recorded during the field surveys for this assessment, along with their Red Data status where relevant (Reg. = regional, Glo. = global): EN = Endangered, VU = Vulnerable, NT = Near-threatened, LC = Least concern).....	62
Appendix 4. Results of the waterbird count on 3 Dec. 2024 along the shoreline of the Berth 605 project area and looking out across to the Sand-spit Island and Kabeljou Flats.	64

SCOPING AND ENVIRONMENTAL IMPACT REPORTING PROCESS FOR THE DEVELOPMENT OF NEW BERTH 605 AND ASSOCIATED INFRASTRUCTURE TO SUPPORT THE CONTAINER HANDLING FACILITY, PORT OF RICHARDS BAY, KWAZULU-NATAL

SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

David G. Allan

EXECUTIVE SUMMARY

This specialist avifaunal assessment covers the proposed new Berth 605 and associated infrastructure project in the Port of Richards Bay.

The baseline environment of the project footprint and immediately surrounding areas is described and mapped, paying special attention to key avifaunal habitats. Relevant habitats within the project footprint comprise secondary woodland and grassland, open water, mangroves with associated intertidal mudflat, shorelines and anthropogenically transformed areas. Two nearby areas of critical avifaunal importance are the Sand-spit Island and Kabeljou.

This assessment includes a detailed review of past and current existing datasets, especially information from the Southern African Bird Atlas Project 2 (SABAP2) and waterbird-count data, relevant to the avifauna of the Project Areas of Influence (PAOI), i.e. the Port of Richards Bay. Waterbird-count data covering the Sand-spit Island and Kabeljou flats are presented separately. This assessment also involved direct field investigations, including compiling bird checklists and undertaking waterbird counts, carried out over four days during the summer period (Nov. 2024 – Jan. 2025). Particular attention is paid to Red Data bird species (equivalent to Species of Conservation Concern) throughout.

A total of 362 bird species were recorded during SABAP2 from the two relevant pentads covering the PAOI. A total of 106 waterbird species have been counted in the PAOI during 55 waterbird counts spanning the period 1977-2023.

A total of 108 bird species were recorded in the general Berth 605 project area during the fieldwork for this assessment. Totals of 16 species and 100 individual birds were recorded during a waterbird count done as part of this assessment along the shoreline of the Berth 605 project area and looking out across to the Sand-spit Island and Kabeljou Flats. A total of 16 species and 170 individual waterbirds were recorded during a further waterbird count on the Sand-spit Island.

A total of 31 Red Data bird species have been recorded in the general Berth 605 project area considering all sources. No Red Data species were recorded in the project footprint area though during the fieldwork but six were recorded in directly adjacent areas.

Study limitations, including assumptions and uncertainties/gaps in knowledge, are identified. Potential impacts of the Berth 605 project on the avifauna are assessed, including potential cumulative impacts. Relevant mitigation measures are recommended. Detailed impact assessment tables are provided.

This assessment identifies five areas of potential concern relevant to avifauna. One of these, the impact on the terrestrial avifauna, is not considered of high significance and is not thought to require any mitigation. Two others, the potential impact on the Sand-spit Island and the Kabeljou Flats, are considered of high

significance but are considered unlikely to manifest due to the distance between these two areas and the project footprint and thus also do not call for any mitigation measures.

The final two aspects, the impact on the mangrove patch and on the 960 m stretch of semi-natural shoreline, both in the project footprint, are considered of high significance and require mitigation. The appropriate mitigation measures in both instances would appear to be offsetting as there and would appear to be no mitigation measures in the form of avoidance, minimisation of magnitude, or rehabilitation/restoration that would be effective in the face of this habitat transformation by stockpiling/dredging, i.e. the residual impact would be large. Such offsetting may be possible directly adjacent to the project footprint, which would likely facilitate the implementation of these measures. Otherwise, the offsets will have to be located elsewhere, preferably still in the Port of Richards Bay (where some potential offset sites have apparently been identified as part of the Port of Richards Bay Masterplan) but if necessary at another location. In the case of semi-natural shoreline, there may be potential for rehabilitating the shoreline in the Port area that has been transformed to a totally unnatural state, rather than creating new semi-natural shoreline.

Provided the recommended mitigation measures (offsetting) are implemented, there would appear no justification from an avifaunal perspective to deny the Berth 605 project authorisation.

SCOPING AND ENVIRONMENTAL IMPACT REPORTING PROCESS FOR THE DEVELOPMENT OF NEW BERTH 605 AND ASSOCIATED INFRASTRUCTURE TO SUPPORT THE CONTAINER HANDLING FACILITY, PORT OF RICHARDS BAY, KWAZULU-NATAL

SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

David G. Allan

16 April 2025, revised 30 April and 19 May 2025

1 INTRODUCTION - BERTH 605 PROJECT COMPONENTS

Transnet National Ports Authority (TNPA) has proposed a new Berth (Berth 605) and associated infrastructure in support of a container-handling facility at the Port of Richards Bay, KwaZulu-Natal (Fig. 1). WSP has been tasked with the engineering and environmental components associated with the development and associated infrastructure. This development is situated in the north-west of the harbour area (Fig. 2). This expansion comprises several different project components, including:

- New quay wall and berth pocket
- Access road
- Container-handling facility
- Dredged area
- Possible laydown area
- Rail siding
- Shared security access point
- Sub-station and electrical tie-in
- Three temporary stockpile areas
- Two terminal access points

All of these components, except for the westernmost and easternmost temporary stockpile areas and the possible laydown area, are situated within the “Project Battery Limit”.

Various utilities tie-in points (water supply, sewer and stormwater) will also be incorporated.

A recent concept document provides a detailed overview of current engineering design and construction planning for the Berth 605 project. This report mentions three potential negative impacts on avifauna from the project that require further assessment:

- Disturbance of avifauna due to construction activities.
- Loss of avifaunal habitat.
- Loss of avifaunal Species of Conservation Concern.

All three impacts are considered of medium/probable probability but low consequence, with an overall significance before mitigation ranked as ‘Medium’.

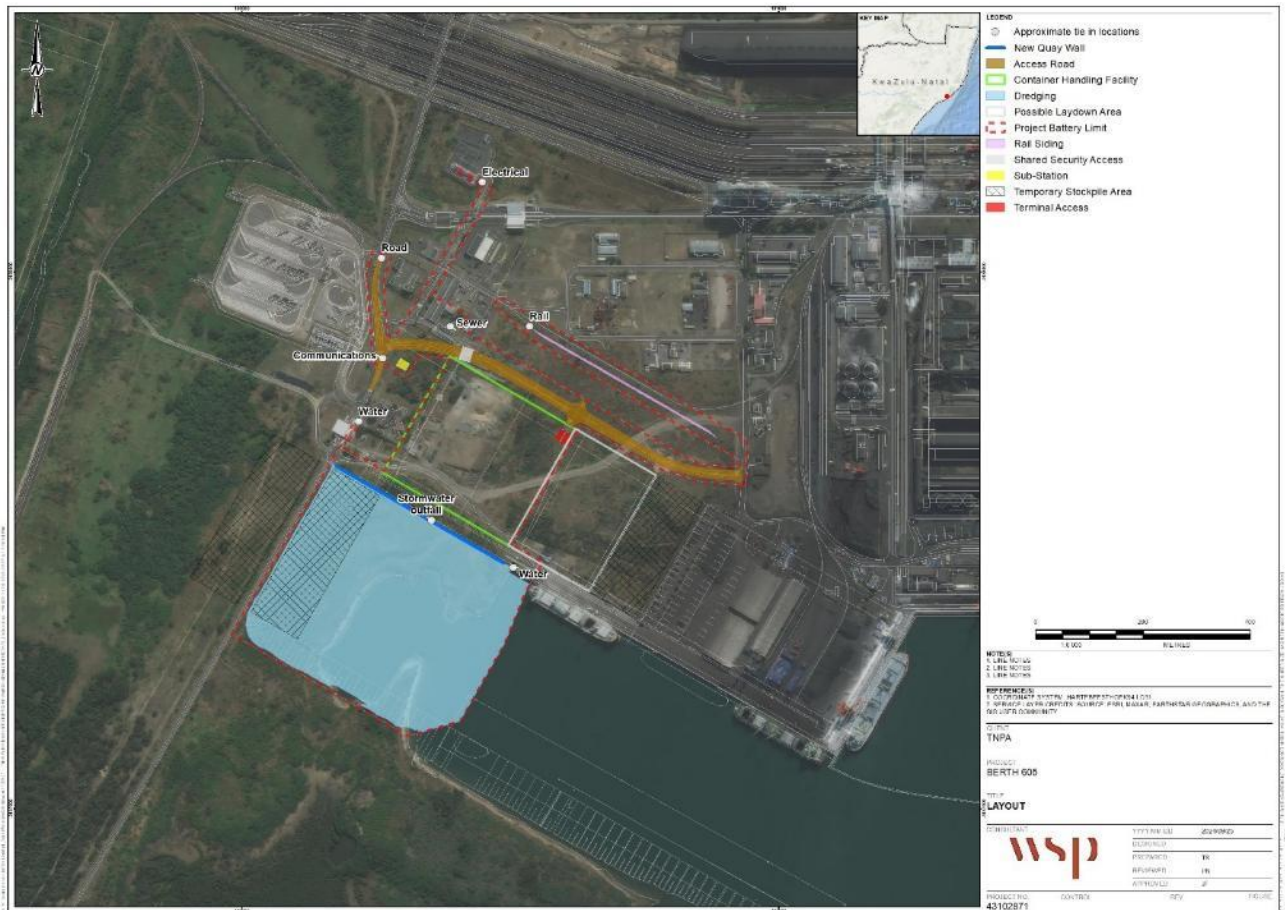


Fig. 1. A close-up view of the project components of the Berth 605 project (as provided by WSP).

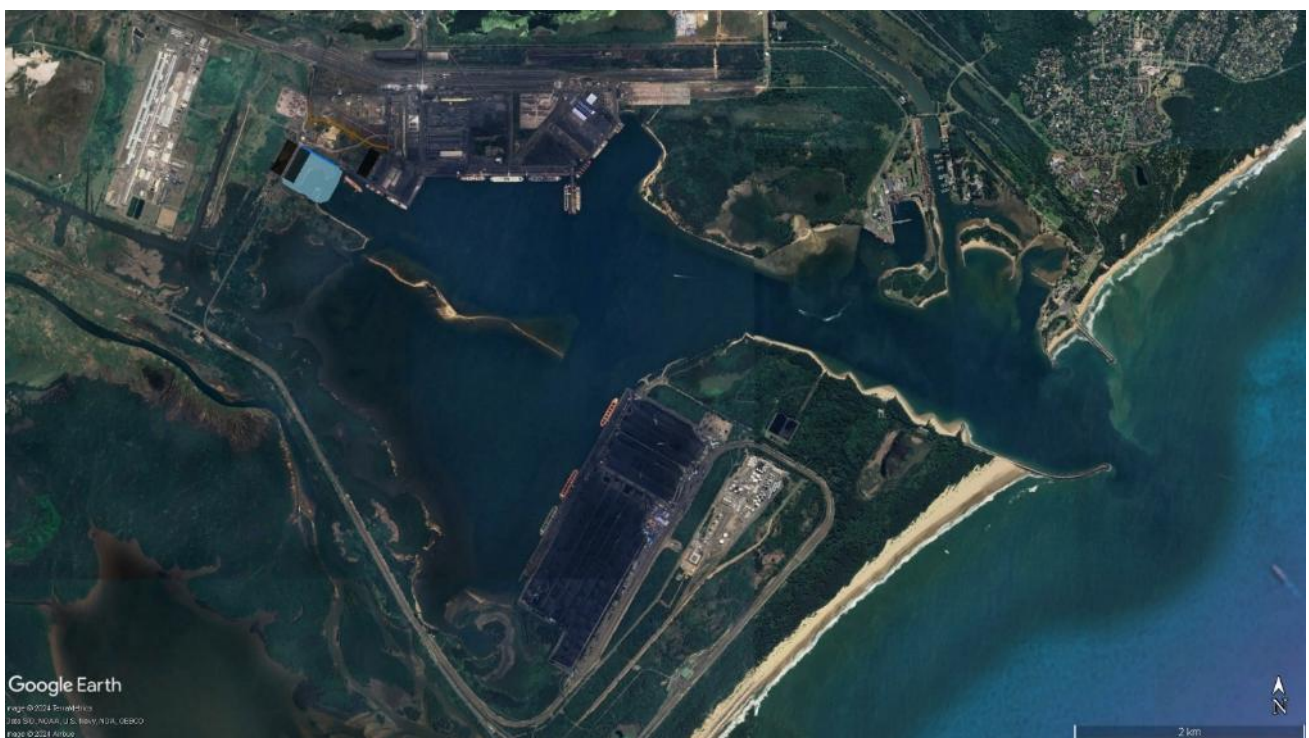


Fig. 2. The position of the Berth 605 project area relative to the broader Richards Bay harbour area.

2 TERMS OF REFERENCE AND THE PROJECT AREAS OF INFLUENCE (PAOI)

The aim of this assessment is to provide a specialist avifaunal impact assessment of the Berth 605 development. The original description of work comprised:

- A review of all the relevant and fairly substantial existing avifaunal information and reports from the Project Areas of Influence (PAOI), i.e. Richards Bay harbour, uMhlathuze estuary, Thulazihleka Pan and other adjacent wetlands, focusing on the specific area to potentially be impacted by the project components.
- Field surveys would take seasonality into account in terms of timing.
- Bird surveys in the project area would be done by two observers working on foot and using a small inflatable boat powered by an outboard engine. Bird data would be captured in the field directly online using the BirdLasser bird-atlas and bird-transect programmes using a smartphone.
- The investigation would at core provide a baseline on the existing avifaunal communities in the project area. This would include compiling a comprehensive species list, along with details of relative and/or absolute abundance (the latter in the case of waterbirds), seasonality of occurrence, habitat, breeding status, conservation status, etc. The assessment would identify any/all specific locations in the project footprint of especial avifaunal concern, including appropriate mapping.
- The final avifaunal report would include identification of potential impacts on bird populations stemming from project activities. It would also include recommendations based on avifaunal considerations, specifically as it applies to further monitoring requirements and potential mitigation measures (including potential offset and compensatory requirements) that may be relevant, including consideration of any rehabilitation measures post-construction.

It was subsequently decided to restrict the PAOI, as defined by SANBI (2020), to the Richards Bay harbour area (Fig. 3) and to exclude adjacent wetlands such as the uMhlathuze estuary, Thulazihleka Pan and other smaller wetlands as these are hydrologically distinct, or largely distinct, from the harbour area, i.e. are not considered likely to be influenced by the development in the Berth 605 project area. SANBI (2020) describe a PAOI as the relevant area: “defined according to the important ecosystem processes and functions that may be plausibly affected by the proposed development and its associated activities.”. Essentially the PAOI as delineated here comprises the direct Berth 605 project footprint and the other directly connected aquatic habitats of the Port of Richards Bay as whole and upon which the highly mobile waterbird populations, the primary focus of concern for this assessment, are reliant. A similar PAOI to that used here has been implemented by other specialist avifaunal assessments in the Port of Richards Bay, e.g. Anchor Environmental Consultants & The Biodiversity Company (2023) relevant to the Gas-Powerships investigation.



Fig. 3. The Berth 605 PAOI (red line), essentially encompassing Richards Bay harbour¹.

It was unfortunately not possible to conduct the envisioned boat-based waterbird counts covering the entire harbour area as done by Anchor Environmental Consultants & The Biodiversity Company (2023) relevant to the Gas-Powerships investigation. This was due to the access restrictions imposed by the TNPA. This report thus relies in this regard on the fairly recent Anchor Environmental Consultants & The Biodiversity Company (2023) counts, which the author of the present report contributed to, as well as observations made during the present assessment on waterbirds from the shoreline in the Berth 605 area and on a survey of the Sand-spit Island waterbird roosting site (see below) facilitated by a boat-based survey linked to a separate hydrographic survey as part of the broader Berth 605 assessment.

This specialist avifaunal assessment has been prepared in accordance with the protocols required by the Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (Act 107 of 1998) as amended, when applying for Environmental Authorisation, which were promulgated in Government Notice No. 320 of 20 March 2020, and in Government Notice No. 1150 of 30 October 2020. This report also adheres to the species environmental assessment guidelines as contained in the 'Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa' (South African National Biodiversity Institute 2020).

¹ Relative to the project development footprint and wetlands adjacent to the PAOI (uMhlathuze estuary and Thulazihleka Pan).

3 DESCRIPTION OF THE BASELINE ENVIRONMENT

The Berth 605 project footprint area in the northwest corner of Richards Bay harbour is situated in an area already heavily impacted by anthropogenic development from past and existing port development initiatives (Fig. 4). This applies to both the terrestrial (dry land) and aquatic components of the area. The terrestrial areas have been extensively worked in terms of clearing, land-levelling and the establishment of existing port-related developments. The aquatic areas have similarly been modified, particularly by excavations and dredging of the originally shallow, tidal mudflats and sandflats to allow for the passage of large, ocean-going vessels.



Fig. 4. Historic imagery (as provided by WSP) from 2006 of the Berth 605 project area showing the highly disturbed nature of the site.

The key landscape features, including avifaunal habitats, present in the project area and immediate surrounds are mapped in Fig. 5 and described below.

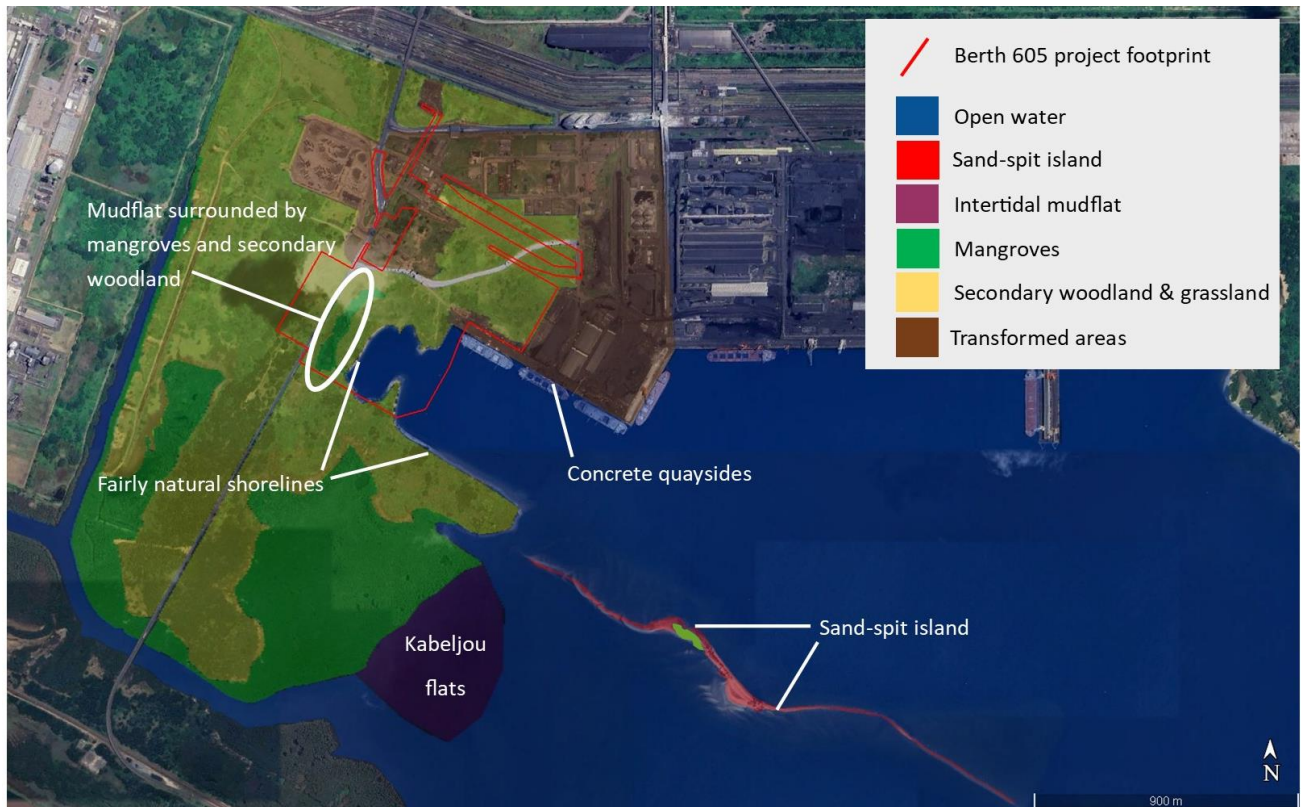


Fig. 5. Key natural avifaunal habitats, as well as currently transformed areas, in and around the Berth 605 project area.

3.1 Secondary woodland and grassland

Fairly substantial areas of the Berth 605 footprint comprise secondary woodland and grassland that has established after the original clearing of these areas associated with the original establishment of the Port of Richards harbour (Fig. 6).



Fig. 6. Secondary woodland and grassland typical of large areas of the Berth 605 project footprint and adjacent areas.

3.2 Open water

The open water areas of the harbour (Fig. 7) are estuarine/marine in nature. The Port of Richards Bay is an estuary with a large and permanently open harbour mouth and a lack of a major freshwater inflowing river with the diversion of the uMhlathuze River into the Southern Sanctuary (Richards Bay Game Reserve), with its separate entrance to the ocean.



Fig. 7. Open-water areas of Richards Bay harbour with the Berth 605 project area visible in the background.

3.3 Mangroves

A fairly extensive stand of mangroves surrounding a small expanse of intertidal mudflat occurs within the Berth 605 project footprint (Fig. 5 and Fig. 8). These mangroves have established in fairly recent times in an area previously highly modified (see Fig. 4). The connection to the harbour allowing tidal interchange and hence the colonisation and persistence of the mangroves and the estuarine nature of this location, is apparently through a pipeline (Fig. 9).



Fig. 8. The mangrove stand located within the Berth 605 project footprint.



Fig. 9. The pipeline apparently allowing tidal flow between the mangrove stand in the Berth 605 project footprint and the harbour.

More extensive mangrove swamps occur to the south and southwest of the Berth 605 project area (Fig. 5). As mentioned above, the Sand-spit Island also supports some very small mangrove stands (Fig. 5).

3.4 Shorelines

The shorelines in the Berth 605 project footprint and general area are now either wholly artificial in the form of concrete harbour quaysides, in the north, or otherwise semi-natural, in the west and south (Fig. 5 and Fig. 10).



Fig. 10. View of the fairly natural shorelines in the Berth 605 project footprint.

During a waterbird count along the shoreline of the Berth 605 project area on 3 Dec. 2024 (discussed further below) evidence was noted of the activities of illegal gill-netters trespassing in the area. Several bundled gill-nets were present at the site (location: -28.797138 32.028872), along with fresh human footprints in the recently exposed intertidal mudflats. This raised security concerns and the waterbird count was curtailed at that point, leading to inadequate coverage of the Kabeljou Flats intertidal mudflat.

Gill-netting activities are of direct avifaunal concern as:

- Swimming and diving waterbirds, such as pelicans, cormorants, grebes, waterfowl, etc., can become entangled in such illegal nets and drown/starve.
- Such illegal netting can significantly reduce the available fish prey upon which piscivorous waterbirds are reliant.
- The presence and activities of gill-netters results in direct disturbance of waterbirds.

3.5 Anthropogenically transformed areas

Some parts of the Berth 605 footprint comprise anthropogenically transformed areas (Fig. 11), and such areas also border the northern and eastern borders of the footprint. These transformed areas include aspects such as roads, railway lines, concrete quaysides, buildings, general harbour infrastructure, cleared ground, dumpsites, etc.



Fig. 11. Highly transformed areas typical of parts of the Berth 605 project footprint and some surrounding areas.

A noticeable aspect of the transformed areas of the Berth 605 project area is heavy truck movement through this part of the harbour. These trucks are apparently transporting coal. They move along dirt roads and hard-surfaced roads that in many cases are badly degraded and potholed, with the surfaces of both road types very uneven over extensive lengths (Fig. 12). The result is the release of large volumes of both coal dust and road dust (which could contain contaminants) into the atmosphere, especially in the windy conditions common at a coastal locality such as the Port of Richards Bay (Fig. 13). A heavy coating of coal and other dust over both transformed areas and over the secondary vegetation is a characteristic of large parts of the Berth 605 project area. This aerially mobile material also spreads over adjacent areas, including into the open-water marine environment where black coal dust is frequently visible on the water surface and associated substrates. It is considered necessary to include this information in this assessment as these aspects are a conspicuous component of the baseline environment at present. They also have direct avifaunal relevance as discussed below.



Fig. 12. A coal-truck driving along a dirt road with a highly uneven and dusty surface close to the Berth 605 project area.



Fig. 13. Coal and other dust associated with heavy truck traffic in the Berth 605 project area under strong-wind conditions.

Relevant to this avifaunal assessment, it was noted that the plumages of some birds in the transformed areas of the Berth 605 project area were stained with black coal dust. These birds likely both ingest such material and any associated contaminants when preening their feathers, feeding, drinking, etc., and probably also inhale this dust. This could have negative health consequences for these birds. Fig. 14 shows Pied Crows photographed in the Berth 605 project area showing such plumage staining and compared with Pied Crows from other areas of KwaZulu-Natal without such staining. Other species of birds in the Berth 605 project area were also noted to have such plumage staining, e.g. Pin-tailed Whydah.



Fig. 14. Pied Crows from the Berth 605 project area showing black coal-dust staining on the white areas of their plumage (two birds on the right) compared with Pied Crows from other parts of KwaZulu-Natal (two birds on the left).

3.6 Sand-spit island

The Sand-spit Island to the southeast of the Berth 605 project area comprises open sandy areas, the exposed extent of which varies with the tide (Fig. 5, Fig. 15 and Fig. 16). Some vegetation occurs on the island in the highest central areas, including some small stands of mangroves.



Fig. 15. View of the Sand-spit Island from across the channel separating it from the mainland looking east.



Fig. 16. View of the Sand-spit Island at low tide taken from the eastern side of the island looking west towards the Berth 605 project area in the background.

During the visit to the Sand-spit Island on 22 Jan. 2025 (see below), a make-shift human encampment was found on the island (location: -28.801049 32.038320, Fig. 17). This was likely used by illegal gill-netting trespassers.



Fig. 17. A make-shift human encampment likely used by illegal gill-netting trespassers found on the Sand-spit Island on 22 Jan. 2025.

3.7 Inter-tidal mudflats

A fairly large expanse of intertidal mudflats, termed the ‘Kabeljou Flats’, is located just south of the Berth 605 project area (Fig. 5 and Fig. 18). This area provides important habitat for waterbirds, especially shorebirds.



Fig. 18. View over the Kabeljou Flats intertidal mudflat at low tide.

4 AVIFAUNAL ASSESSMENT METHODOLOGY

This avifaunal assessment of the Berth 605 project area is based on two separate sources of information:

- Existing baseline avifaunal information.
- Field surveys of the Berth 605 project area.

The key sources of the existing baseline information include the National Environmental Site Screening Tool, Southern African Bird Atlas Project 2 (SABAP2), existing sources of waterbird count information and information pertaining to ‘Important Bird and Biodiversity Areas’ (IBAs).

4.1. Existing baseline avifaunal information

4.1.1 National Environmental Site Screening Tool

A report was generated using the National Environmental Site Screening Tool (see: <https://screening.environment.gov.za/screeningtool/#/pages/welcome>).

4.1.2 Southern African Bird Atlas Project 2

The PAOI is covered by two ‘pentads’ (2845_3200 and 2845_3205), the unit of geographical coverage of the Southern African Bird Atlas Project 2 (SABAP2, see: <https://sabap2.birdmap.africa/>). A pentad covers an area of 5 mins X 5 mins resolution, i.e. about 9 X 8 km. The borders of these two pentads are shown in Fig. 19. Coverage of these two pentads is very comprehensive, especially for 2845_3200, with 801 full-protocol checklists for this pentad and 274 for 2845_3205 (1075 full-protocol checklists in total). There are an additional 315 ad hoc-protocol checklists for the two pentads, i.e. 1390 checklists of both protocols for both pentads combined. The time-period covered by these checklists is 2007-2024.



Fig. 19. The two SABAP2 pentads (green lines) covering the Berth 605 Project Areas of Influence (PAOI – see Section 2; red lines). The various Berth 605 project components are also depicted.

4.1.3 Existing waterbird count information

There are six existing sources of waterbird count information from the Project Area of Influence (Richards Bay harbour area). These sources are summarized in Table 1.

Table 1. Details of the six existing sources of waterbird count information from the PAOI (Richards Bay harbour area).

Source	Time period	No. of counts
1-Begg (1978)	1976-1977	9
2-Ryan et al. (1986)	1980-1981	1
3-Co-ordinated Waterbird Counts project (CWAC, see: http://cwac.adu.org.za)	1993-2012	25
4-Allan & McInnes (2002)	2001	3
5-Allan (2009)	2008	1
6-Anchor Environmental Consultants & The Biodiversity Company (2023)	2022-2023	16

The precise area of coverage of the first three of these sources is poorly documented and all three have coverage that extends into the adjacent uMhlathuze estuary area to an unknown extent. The coverage of the remaining three sources is strictly limited to the PAOI. The time-period covered by the first source (Begg 1978) comes from the period prior to and during the initial harbour development at Richards Bay. It therefore represents a situation vastly different from that pertaining currently. The same likely applies to the waterbird count presented by the second source (Ryan et al. 1986) which was conducted shortly after the major harbour developments had been implemented.

The three most recent counts (Allan & McInnes 2002, Allan 2009 and Anchor Environmental Consultants & The Biodiversity Company 2023) compiled their respective count information separately for separate sections of the PAOI. For example, the 12 sections in the PAOI covered by the sixth source (Anchor Environmental Consultants & The Biodiversity Company 2023) is shown in Fig. 20. The author of the current report was responsible for the final of the 16 counts represented in that source.



Fig. 20. The 12 sections (white lines) in the PAOI (red lines) covered by the sixth source (Anchor Environmental Consultants & The Biodiversity Company 2023) in Table 1.

4.1.4 Important Bird and Biodiversity Areas

Marnewick et al. (2015) and the website: www.birdlife.org.za/conservation/important-bird-areas/iba-directory were sourced to gather details of Important Bird and Biodiversity Areas (IBAs) close to the Berth 605 project area.

4.2 Field surveys of the Berth 605 project area

4.2.1 Bird common and scientific names and species ordering

The common and scientific names, and species order of presentation, of all bird species mentioned in this assessment are based on the IOC World Bird List version 15.1 (Gill et al. 2025, see: <https://www.worldbirdnames.org/new/>). The scientific names of all bird species mentioned in this assessment are presented in Appendix 1.

4.2.2 Avifaunal field surveys of the Berth 605 project area

Avifaunal field surveys of the Berth 605 project area were conducted on 29 November and 3 December 2024 as well as on 22 and 30 January 2025.

All bird observations, both of waterbirds and other bird species, were made by one or two observers working together either on foot or from a motor vehicle. Access to the Sand-spit Island on 22 January 2025 was by means of a boat used for the hydrographic surveys.

Binoculars (10 X 40) and a high-quality telescope fitted with a 20-60X telephoto zoom lens mounted on a tripod were used to examine birds in the field. A Canon EOS R7 mirrorless camera fitted with an 800 mm Canon f11 telephoto lens was used to take photographs of birds in the field. Photos of habitats and other relevant features as presented in this report were taken with the same camera body fitted with a Canon EFS 18-55 mm lens and also with an Apple iPhone 8.

Relevant to the waterbird counts, many of the ‘wading’ waterbirds, e.g. plovers and sandpipers, move between their intertidal foraging mudflats and sandflats, available to them only at low tide when exposed, and their higher-lying roosting sites at high tide. The Kabaljou Flats, for example, is a low-tide foraging area, while the Sand-spit Island is a high tide roosting area. The state of the tidal cycle is therefore important in the timing of waterbird counts in estuarine areas subject to tidal influence. Foraging mudflats and sandflats should ideally be counted at low tide and roosting areas at high tide.

4.2.2.1 Avifaunal species lists

Observations of all bird species encountered were recorded following SABAP2 (see above) protocols directly on the smartphone app BirdLasser (see: <https://www.birdlasser.com/>) and subsequently downloaded as Microsoft Excel spreadsheets. One advantage of using BirdLasser is that all bird records are automatically georeferenced.

4.2.2.2 Waterbird counts

A count of waterbirds along the shoreline of the Berth 605 project area and on the Sand-spit Island on 3 December 2024 was recorded directly on the smartphone app BirdLasser (see: <https://www.birdlasser.com/>) and subsequently downloaded as a Microsoft Excel spreadsheet. This count was made at low tide (08h27 - 10h21). The other waterbird count on the Sand-spit Island on 22 January 2025 was manually recorded in a notebook and subsequently entered in a spreadsheet. This count was made at peak high tide (although the visit to the island spanned 08h31-14h48).

4.2.2.3 Red Data species

Special attention was paid to record the details of all Red Data bird species (equivalent to ‘Species of Conservation Concern’ (SCC; SANBI 2020) encountered during the field surveys.

4.2.2.4 GPS tracks

The route tracks (Fig. 21) travelled on foot, by vehicle and by boat during the fieldwork for this assessment were recorded using a Garmin eTrex 10 GPS device.



Fig. 21. The route tracks travelled on foot, by vehicle and by boat during the fieldwork for this assessment as recorded using a Garmin eTrex 10 GPS device.

5 ASSESSMENT OF THE AVIFAUNA OF THE BERTH 605 PROJECT AREA

5.1 Existing baseline avifaunal information

5.1.1 National Environmental Site Screening Tool

According to the report generated using the National Environmental Site Screening Tool, the general Berth 605 project area is ranked ‘High sensitivity’ in terms of the Animal Species Theme (‘Very high sensitivity’ relevant to both the Aquatic and Terrestrial Biodiversity Themes).

Sixteen bird species are identified as relevant in this regard by the tool (Table 2).

Table 2. The 16 sensitive species identified by the National Environmental Site Screening Tool in the Berth 605 project area.

Species	Sensitivity
African Finfoot <i>Podica senegalensis</i>	High
African Marsh Harrier <i>Circus ranivorus</i>	High
African Pygmy Goose <i>Nettapus auritus</i>	High
Caspian Tern <i>Hydroprogne caspia</i>	High
Crowned Eagle <i>Stephanoaetus coronatus</i>	High
Denham’s Bustard <i>Neotis denhami</i>	High
Great White Pelican <i>Pelecanus onocrotalus</i>	High
Grey Crowned Crane <i>Balearica regulorum</i>	High

Species	Sensitivity
Lesser Jacana <i>Microparra capensis</i>	High
Mangrove Kingfisher <i>Halcyon senegaloides</i>	High
Pink-backed Pelican <i>Pelecanus rufescens</i>	High
Saddle-billed Stork <i>Ephippiorhynchus senegalensis</i>	High
Southern Banded Snake Eagle <i>Circaetus fasciolatus</i>	High
Spotted Ground Thrush <i>Geokichla guttata</i>	High
Tawny Eagle <i>Aquila rapax</i>	High
Yellow-billed Stork <i>Mycteria ibis</i>	High

5.1.2 Southern African Bird Atlas Project 2

A total of 362 bird species were recorded during SABAP2 from the two relevant pentads (2845_3200 and 2845_3205) and details of these are presented in Appendix 1.

5.1.3 Existing waterbird count information

A total of 106 waterbird species have been counted in the PAOI during the 55 waterbird counts spanning the period 1977-2023. Full details of all waterbirds counted during all six of these sources of waterbird-count data are presented in Appendix 2.

Appendix 2 also identifies the relevant thresholds qualifying sites for regional and global Important Bird and Biodiversity Area (IBA) status and Ramsar Wetlands of International Importance status where these are available. Details of the 11 species meeting these criteria are presented in Table 3.

Table 3. Counts of waterbird species from the six sources of waterbird-count information².

Source	Begg 1978	Ryan et al 1986	CWAC 1993-2012	Allan & McInnes 2002	Allan 2009	Anchor Environmental Consultants & The Biodiversity Company 2023	IBA	Sub-reg. IBA	Ramsar
Date	1976-1977	1980-1981	2012	2001	2008	2022-2023			
No. of counts	9	1	25	3	1	14			
Com. name			Mean	Max	Mean	Max	Mean	Max	
A Spoonbill	110	11	13	61	0	0	0	0	150
Casp. Tern	80	23	21	51	22	27	10	46	135
CR Plover	10000	1092	77	357	0	0	0,1	1	1500
Com. Tern	2000	208	1130	13000	4	12	12	74	8000
Cur. Sandpiper	10000	3180	186	717	137	312	406	0,5	3
L. Stint	10000	3294	224	677	0	0	23	0	0
L. Tern	2000	225	217	700	0	0	6	4,1	32
P. Avocet	375	200	0	0	0	0	0	0	1000
Whisk. Tern	7	0	53	200	0	0	0	0	250
WB Cormorant	200	0	14	40	0,7	1	0	0,4	3
WW Tern	2000	93	29	50	0	0	69	0,1	1

Ten of the 11 species in Table 3 met IBA/Ramsar in the 1976-1977 Begg (1978) counts but only five of these met these criteria in subsequent counts and only one of these, Caspian Tern, has met these criteria in counts made after 2012.

5.1.4 Important Bird and Biodiversity Areas

The Berth 605 PAOI is directly adjacent to the Richards Bay Game Reserve sub-regional Important Bird and Biodiversity Area (IBA; Fig. 22). The two areas are separated by a broad berm with major road and railway arterials routed along it. The two sites are no longer hydrologically linked.

² That meet the relevant thresholds (highlighted in red) qualifying sites for regional and global Important Bird and Biodiversity Area (IBA) status and/or Ramsar status where this information is available.

This formally protected area is under the control of the provincial nature conservation authority, Ezemvelo KZN Wildlife. This IBA was proclaimed on the basis of the presence of large numbers of a wide diversity of waterbirds. Key 'trigger species' include Pink-backed and Great White pelicans, Caspian Tern, Mangrove Kingfisher, Greater Flamingo and Little and Whiskered terns.



Fig. 22. The Richards Bay Game Reserve sub-regional Important Bird and Biodiversity Area (IBA, green lines) relative to the Berth 605 PAOI (red lines).

5.2 Avifaunal field surveys of the Berth 605 project area

5.2.2.1 Avifaunal species lists

A total of 108 bird species were recorded during the four days of field surveys (29 November and 3 December 2024 as well as on 22 and 30 January 2025) for this assessment (Appendix 1 and Appendix 3).

5.2.2.2 Waterbird count

A total of 16 species and 100 individual birds were recorded during the 3 December 2024 waterbird count at low tide along the shoreline of the Berth 605 project area and looking out across to the Sand-spit Island and Kabeljou Flats (Table 4 and Appendix 4). Eight species and 21 individuals were counted in the Berth 605 project area (Fig. 23), nine species and 64 individuals on the Sand-spit Island, single individuals of two species on the Kabeljou Flats and 11 individuals of three species were observed flying over the area. Coverage of the Kabeljou Flats was highly incomplete as access to this area was not deemed safe and curtailed as there were illegal gill-netting trespassers in the area (as mentioned above).



Fig. 23. Water Thick-knee (left) and Eurasian Whimbrel (right) photographed during the 3 Dec. waterbird count along the shoreline in the Berth 605 project area.

Table 4. Results of the low-tide waterbird count on 3 December 2024 along the shoreline of the Berth 605 project area and looking out across to the Sand-spit Island and Kabeljou Flats.

Area	Species	No. of birds	Area	Species	No. of birds
Berth 605 area	African Fish Eagle	2	Sand-spit Island	African Fish Eagle	1
	Common Sandpiper	10		Caspian Tern	14
	Eurasian Whimbrel	5		Common Sandpiper	5
	Hadada Ibis	1		Egyptian Goose	1
	Malachite Kingfisher	1		Eurasian Whimbrel	20
	Water Thick-knee	2		Grey Heron	1
	Western Osprey	1		Grey Plover	20
	White-fronted Plover	1		Grey-headed Gull	1
Flying over	Great White Pelican	5	Kabeljou Flats	Western Osprey	1
	Palm-nut Vulture	2		Caspian Tern	1
	Woolly-necked Stork	4		Western Osprey	1

6 SAND-SPIT ISLAND ROOST SITE AND KABELJOU FLATS INTERTIDAL MUDFLAT FORAGING AREA

6.1 Existing baseline avifaunal information

Some of the earlier waterbird count efforts in the Berth 605 PAOI identified two areas situated relatively close to the actual Berth 605 project area as being of particular importance to waterbird populations (Allan & McInnes 2002, Allan 2009 and Anchor Environmental Consultants & The Biodiversity Company 2023). These are the Sand-spit Island roost site and the Kabeljou Flats intertidal mudflat foraging area (Fig. 24).



Fig. 24. The Sand-spit Island roost site and Kabeljou Flats inter-tidal mudflat foraging area close to the Berth 605 development site.

6.1.1 Sand-spit island roost site

Numbers of waterbirds counted at the Sand-spit Island roost site in 2001 (n=3 counts; Allan & McInnes 2002), December 2008 (n=1 count; Allan 2009) and 2022-2023 (n= 16 counts; Anchor Environmental Consultants & The Biodiversity Company 2023) are presented in Table 5. The numbers of birds counted in the single high-tide count of December 2008 (1230 birds) were much higher than the 2001 counts (31-189 birds) and the 2022-2023 counts (48-236 birds). All three of the 2001 counts and 14 of the 16 2022-2023 counts were made at low tide.

Table 5. Numbers of waterbirds counted at the Sand-spit Island roost site in 2001 (Allan & McInnes 2002), Dec. 2008 (Allan 2009), 2022-2023 (Anchor Environmental Consultants & The Biodiversity Company 2023) and during this assessment (2025).

Date	2001		2008	2022-2023		2025
Source	Allan & McInnes 2002		Allan 2009	Anchor Environmental Consultants & The Biodiversity Company 2023		This assessment
Tide	Low		High	14 Low & 2 High		High
No. counts	3		1	16		1
Mean/Max	Mean	Max		Mean	Max	
Cormorant, Reed	0,0	0	0	0,1	1	0
Cormorant, White-breasted	0,3	1	0	0,0	0	0
Curlew, Eurasian	0,0	0	2	0,0	0	0
Egret, Little	0,0	0	2	0,4	4	0
Fish-eagle, African	0,3	1	2	1,3	4	2
Godwit, Bar-tailed	0,0	0	1	0,7	3	1
Goose, Egyptian	0,0	0	0	0,2	2	0
Greenshank, Common	0,0	0	1	0,1	2	0
Gull, Grey-headed	48,0	139	19	3,0	14	9
Gull, Kelp	0,3	1	0	0,4	3	0
Heron, Goliath	0,0	0	1	0,0	0	0
Heron, Grey	0,7	2	0	0,1	1	0
Kingfisher, Malachite	1,7	3	0	0,0	0	0
Kingfisher, Pied	0,3	1	0	0,1	2	0
Knot, Red	0,0	0	2	0,0	0	0
Osprey, Western	0,0	0	1	1,5	4	1

Date	2001		2008	2022-2023		2025
Source	Allan & McInnes 2002		Allan 2009	Anchor Environmental Consultants & The Biodiversity Company 2023		This assessment
Tide	Low		High	14 Low & 2 High		High
No. counts	3		1	16		1
Mean/Max	Mean	Max		Mean	Max	
Pelican, Pink-backed	0,0	0	0	0,1	2	0
Plover, Common Ringed	0,0	0	0	0,1	1	0
Plover, Greater Sand Plover	0,0	0	105	0,1	1	6
Plover, Grey	1,3	4	240	21,7	68	30
Plover, White-fronted	7,0	20	17	4,1	12	20
Sanderling	0,3	1	9	1,8	25	0
Sandpiper, Common	2,3	7	0	0,5	5	3
Sandpiper, Curlew	0,0	0	402	0,5	3	0
Sandpiper, Terek	0,0	0	170	0,8	6	0
Stork, Woolly-necked	0,3	1	0	0,2	3	0
Tern, Black	0,0	0	1	0,0	0	0
Tern, Caspian	13,3	21	1	4,4	20	1
Tern, Common	0,3	1	39	2,5	24	3
Tern, Lesser Crested	0,0	0	2	11,6	107	39
Tern, Little	0,0	0	1	2,1	32	7
Tern, Sandwich	3,0	9	1	1,1	10	4
Tern, Swift	2,7	7	27	17,6	150	8
Tern, White-winged	0,0	0	69	0,0	0	0
Thick-knee, Water	1,7	5	0	0,0	0	2
Turnstone, Ruddy	0,0	0	0	0,1	2	0
Wagtail, African Pied	2,7	8	0	0,0	0	0
Whimbrel, Common	3,3	4	115	31,7	65	36
Totals	88,7	189	1230	108,8	236	170

6.1.2 Kabeljou Flats intertidal mudflat foraging area

Numbers of waterbirds counted at the Kabeljou Flats intertidal mudflat foraging area in 2001 (n=3 counts; Allan & McInnes 2002), December 2008 (n=1 count; Allan 2009) and 2022-2023 (n=14 counts; Anchor Environmental Consultants & The Biodiversity Company 2023) are presented in Table 6. The numbers of birds counted in the most recent counts (2022-2023, 4-137 birds) are much lower than those recorded during the 2001 (27-453 birds) and 2008 (149 birds) counts, especially the 2001 counts.

Table 6. Numbers of waterbirds counted at the Kabeljou Flats inter-tidal mudflats foraging site in 2001 (Allan & McInnes 2002), Dec. 2008 (Allan 2009) and 2022-2023 (Anchor Environmental Consultants & The Biodiversity Company 2023).

Date	2001		2008	2022-2023	
Source	Allan & McInnes 2002		Allan 2009	Anchor Environmental Consultants & The Biodiversity Company 2023	
Tide	Low		Low	Low	
No. of counts	3		1	14	
Mean/Max	Mean	Max		Mean	Max
Cormorant, White-breasted	0,3	1	0	0,1	1
Curlew, Eurasian	0,0	0	1	0,1	1
Egret, Great	0,0	0	0	0,2	3
Egret, Little	7,0	13	12	2,4	7
Fish-eagle, African	2,7	3	2	0,5	2
Godwit, Bar-tailed	2,0	6	0	0,1	1
Goose, Egyptian	0,0	0	0	0,1	1
Greenshank, Common	5,7	17	2	0,0	0
Gull, Grey-headed	3,3	5	0	0,6	7
Gull, Kelp	0,0	0	0	0,1	1
Heron, Goliath	1,0	2	0	0,0	0
Heron, Grey	2,7	5	1	0,3	2
Kingfisher, Malachite	0,3	1	0	0,0	0
Kingfisher, Pied	2,7	6	0	0,0	0
Osprey	0,7	1	2	1,0	3
Pelican, Great White	0,0	0	0	0,4	6
Pelican, Pink-backed	0,7	2	0	0,0	0
Plover, Chestnut-banded	4,7	14	0	0,0	0
Plover, Greater Sand Plover	0,0	0	5	0,0	0

Date	2001		2008	2022-2023	
Source	Allan & McInnes 2002		Allan 2009	Anchor Environmental Consultants & The Biodiversity Company 2023	
Tide	Low		Low	Low	
No. of counts	3		1	14	
Mean/Max	Mean	Max		Mean	Max
Plover, Grey	47,7	113	34	8,1	35
Plover, White-fronted	0,3	1	29	0,2	2
Pratincole, Collared	1,0	3	0	0,0	0
Sanderling	1,0	3	0	0,0	0
Sandpiper, Common	0,7	2	0	0,1	1
Sandpiper, Curlew	136,7	312	0	0,0	0
Sandpiper, Terek	9,0	23	0	0,0	0
Stork, Woolly-necked	1,0	2	0	0,6	3
Yellow-billed Stork	0,7	2	0	0,0	0
Tern, Caspian	1,3	4	0	0,4	3
Tern, Swift	0,0	0	0	0,1	1
Whimbrel, Common	26,0	41	60	14,4	76
Totals	259,0	453	149	29,9	137

6.2 Avifaunal field surveys of the Berth 605 project area

6.2.1 Sand-spit Island roost site

A total of 16 species and 170 individual waterbirds were recorded during the 22 January 2025 waterbird roost count at high tide on the Sand-spit Island (Table 5).



Fig. 25. Greater Sand Plover (left) and Lesser Crested Tern (right) at the Sand-spit Island during the 22 Jan. 2025 waterbird count.

6.2.2 Kabeljou Flats intertidal mudflat foraging area

As mentioned above, only single individuals of two species (Caspian Tern and Western Osprey, Table 4) were recorded on the Kabeljou Flats during the waterbird count made on 3 December 2024 but coverage of this area was highly incomplete and curtailed as access was not deemed safe as there were illegal gill-netting trespassers in the area (also as mentioned above).

7 RED DATA SPECIES

7.1 Existing baseline avifaunal information

Twenty-nine of the 362 species recorded in the SABAP2 database in the two relevant pentads covered by the Berth 605 PAOI (Table 7) are Red Data species (equivalent to Species of Conservation Concern, Taylor et al. 2015).

Table 7. Details of the 29 Red Data species recorded during SABAP2 in the two pentads relevant to the Berth 605 Project Areas of Influence (PAOI)³.

Common name	Full protocol			Ad hoc protocol			Red Data Reg./Glo.
	Rep. rate	No. recs	Latest rec.	Rep. rate	No. recs	Latest rec.	
Pelican, Pink-backed	16,6	178	2022/12/07	1,0	3	2020/04/16	VU/LC
Pelican, Great White	11,7	126	2022/10/25	1,3	4	2020/04/11	VU/LC
Gannet, Cape	0,9	10	2022/08/09	1,0	3	2024/07/23	VU/EN
Cormorant, Cape	1,8	19	2023/06/21	0,6	2	2024/07/23	EN/EN
Stork, Saddle-billed	0,6	6	2022/08/09	0,3	1	2016/07/10	EN/LC
Stork, Yellow-billed	1,2	13	2024/04/25	0,0	0	-	EN/LC
Flamingo, Greater	13,0	140	2022/02/11	1,9	6	2020/01/20	NT/LC
Flamingo, Lesser	0,4	4	2016/01/09	0,0	0	-	NT/NT
Goose, African Pygmy	5,6	60	2024/09/22	6,5	20	2024/04/29	VU/LC
Falcon, Lanner	1,9	20	2021/01/07	1,6	5	2020/09/24	VU/LC
Eagle, Tawny	0,1	1	2017/01/01	0,0	0	-	EN/VU
Eagle, Crowned	1,8	19	2021/01/31	2,6	8	2020/04/21	VU/NT
Harrier, African Marsh	11,3	122	2022/01/10	1,0	3	2016/11/08	EN/LC
Finfoot, African	2,9	31	2022/03/29	0,6	2	2022/08/04	VU/LC
Crane, Grey Crowned	0,5	5	2018/02/11	0,0	0	-	EN/EN
Bustard, Denham's	0,5	5	2014/07/19	0,0	0	-	VU/NT
Jacana, Lesser	2,0	22	2020/01/02	0,3	1	2018/12/16	VU/LC
Oystercatcher, Eurasian	0,1	1	2019/04/18	0,0	0	-	NA/NT
Painted-snipe, Greater	0,9	10	2019/10/04	0,0	0	-	NT/LC
Turnstone, Ruddy	3,7	40	2022/12/16	1,9	6	2020/10/26	LC/NT
Plover, Grey	38,7	416	2023/04/11	13,2	41	2023/04/23	LC/VU
Sandpiper, Curlew	7,5	81	2022/12/07	2,3	7	2020/02/08	LC/VU
Knot, Red	0,3	3	2022/02/11	0,0	0	-	LC/NT
Godwit, Bar-tailed	3,4	37	2022/12/16	0,6	2	2021/01/02	LC/NT
Curlew, Eurasian	1,9	20	2024/10/04	1,0	3	2020/02/08	NT/NT
Tern, Caspian	45,2	486	2024/09/29	14,2	44	2022/10/17	VU/LC
Kingfisher, Half-collared	1,9	20	2016/01/09	1,0	3	2024/06/07	NT/LC
Kingfisher, Mangrove	3,8	41	2024/07/26	0,3	1	2022/07/08	EN/LC
Roller, European	3,6	39	2020/12/13	0,0	0	-	NT/LC

Twenty-two Red Data waterbird species have been recorded during the waterbird counts made by the six previous studies described above (Table 8).

³ The data are presented separately for Full Protocol and 'Ad hoc' checklists and reflect both reporting ('Rep.') rates, the total number of records for each of these two checklist types and the date of the latest record for the Full Protocol and Ad hoc checklists. Red Data status (Reg. = regional, Glo. = global): EN = Endangered, VU = Vulnerable, NT = Near-threatened, LC = Least concern and NA = Not assessed).

Table 8. Details of the 22 Red Data species recorded during the waterbird counts made by the six sources described above relevant to the Berth 605 Project Areas of Influence (PAOI)⁴.

Source	Begg (1978)	Ryan et al. (1986)	CWAC	Allan & McInnes (2002)	Allan (2009)	Anchor Environmental Consultants & The Biodiversity Company (2023)	Red Data Reg./Glob.	IBA	Sub-reg. IBA	Ramsar
Date	1976-1977	1980-1981	1993-2012	2001	2008	2022-2023				
No. of counts	9	1	25	3	1	14				
Common name			Mean Max	Mean Max		Mean Max				
African Marsh Harrier	2	1	1,6 6	0,0 0	0	0,0 0	EN/LC			
African Pygmy-Goose	0	0	9,3 26	0,0 0	0	0,0 0	VU/LC			
Bar-tailed Godwit	1	54	3,6 10	2,0 6	1	0,9 5	LC/NT			
Cape Cormorant	120	0	4,5 7	0,0 0	0	0,5 5	EN/EN	5500	2750	3000
Cape Gannet	3	0	0,0 0	0,0 0	0	0,0 0	VU/EN			
Caspian Tern	80	23	21,3 51	21,7 27	2	10,7 46	VU/LC	135	68	20
Chestnut-banded Plover	0	0	7,0 7	4,7 14	0	0,0 0	NT/LC	400	200	130
Curlew Sandpiper	10000	3180	186,2 717	136,7 312	406	0,5 3	LC/VU	7500	3750	
Eurasian Curlew	0	7	5,9 15	0,3 1	2	0,1 1	NT/NT			1000
Great White Pelican	0	46	42,3 140	0,0 0	2	0,4 6	VU/LC	1800	900	300
Greater Flamingo	0	9	39,8 97	0,0 0	0	0,0 0	NT/LC	1250	625	750
Grey Crowned Crane	0	0	2,2 4	0,0 0	0	0,0 0	EN/EN			80
Grey Plover	50	103	109,1 278	54,3 133	240	33,7 68	LC/VU	1700	850	900
Lesser Flamingo	0	209	1,0 1	0,0 0	0	0,0 0	NT/NT	20000	10000	600
Lesser Jacana	0	0	1,2 2	0,0 0	0	0,0 0	VU/LC			
Mangrove Kingfisher	0	0	2,0 3	0,0 0	0	0,0 0	EN/LC			
Pink-backed Pelican	0	17	9,1 35	0,7 2	2	2,5 12	VU/LC		500	750
Red Knot	0	21	7,1 27	0,0 0	2	0,0 0	LC/NT	5000	2500	4000
Ruddy Turnstone	50	5	2,6 8	0,0 0	0	0,2 2	LC/NT	350	175	1000
Saddle-billed Stork	0	1	0,0 0	0,0 0	0	0,0 0	EN/LC			
Subantarctic Skua	0	0	1,0 1	0,0 0	0	0,0 0	EN/LC			
Yellow-billed Stork	13	0	5,1 15	0,7 2	0	0,0 0	EN/LC	500	250	870

⁴ Red Data status (Reg. = regional, Glo. = global): EN = Endangered, VU = Vulnerable, NT = Near-threatened and LC = Least concern.

The total number of all Red Data bird species recorded in the PAOI during both earlier assessment methods therefore is 31.

Five of the 29 Red Data species recorded in the two pentads during SABAP2 are terrestrial species (Lanner Falcon, Tawny and Crowned eagles, Denham's Bustard and European Roller) and hence were not recorded during the waterbird counts. Two of these (Tawny Eagle and Denham's Bustard) were recorded at full-protocol reporting rates of less than 1% and therefore can be considered as extremely rare visitors to these two pentads.

A further four waterbird Red Data species recorded in the two pentads during SABAP2 (African Finfoot, Eurasian Oystercatcher, Greater Painted Snipe and Half-collared Kingfisher) were not recorded during the waterbird counts. Conversely, two Red Data waterbird species not recorded during SABAP2 (Chestnut-banded Plover and Subantarctic Skua) were recorded during the waterbird counts.

Two of the waterbird species (Eurasian Oystercatcher and Greater Painted Snipe) only recorded during SABAP2 had full-protocol reporting rates of less than 1% and can again be considered as extremely rare visitors to these two pentads, especially given that they were not recorded during any of the waterbird counts.

This review of existing baseline information on Red Data species indicates that it is waterbird species, rather than terrestrial species, that are of primary concern relevant to the potential impact from the Berth 605 project development.

7.2 Avifaunal field surveys of the Berth 605 project area

Details of the six Red Data bird species encountered during the field surveys are presented in (Table 9, Fig. 26 and Fig. 27).

Table 9. Details of all records of the six Red Data bird species encountered during the field surveys⁵.

Species	Date	Latitude	Longitude	No. of birds	Activity
Pelican, Pink-backed (VU/LC)	2024/11/29	-28.789364	32.027733	1	Flying over
Pelican, Pink-backed (VU/LC)	2024/12/03	-28.785151	32.052608	5	On tall mast light
Pelican, Pink-backed (VU/LC)	2025/01/30	-28.785139	32.052921	4	On tall mast light*
Pelican, Pink-backed (VU/LC)	2025/01/30	-28.788000	32.020699	1	Flying over
Pelican, Pink-backed (VU/LC)	2025/01/30	-28.789835	32.025562	4	Flying over
Pelican, Great White (VU/LC)	2024/12/03	-28.792883	32.027195	5	Flying over
Pelican, Great White (VU/LC)	2025/01/30	-28.800987	32.018345	2	Flying over
Pelican, Great White (VU/LC)	2025/01/30	-28.788015	32.020657	2	Flying over
Stork, Yellow-billed (EN/LC)	2024/11/29	-28.789364	32.027733	2	Flying over
Plover, Grey (LC/VU)	2024/12/03	-28.797403	32.031376	20	Sand-spit Island
Plover, Grey (LC/VU)	2025/01/22	-28.802616	32.039349	30	Sand-spit Island
Godwit, Bar-tailed (LC/NT)	2025/01/22	-28.800409	32.036892	1	Sand-spit Island
Tern, Caspian (VU/LC)	2024/11/29	-28.801069	32.018391	1	Flying over
Tern, Caspian (VU/LC)	2024/12/03	-28.797310	32.031376	1	Kabeljou flats
Tern, Caspian (VU/LC)	2024/12/03	-28.797430	32.031429	14	Sand-spit Island
Tern, Caspian (VU/LC)	2025/01/22	-28.800379	32.036827	1	Sand-spit Island
Tern, Caspian (VU/LC)	2025/01/30	-28.801229	32.018230	1	Flying over

* - on nesting mast light. Fledged young? Well whitewashed but little nesting material visible

⁵ Red Data status (Reg. = regional/ Glo. = global): EN = Endangered, VU = Vulnerable, NT = Near-threatened and LC = Least concern.

All of these species have been previously recorded in the earlier investigations discussed under the baseline studies. None of these records from the field surveys come from the Berth 605 project footprint but rather from nearby adjacent areas, i.e. a tall quayside mast light located about 1.6 km from the nearest edge of the project footprint, the Sand-spit Island, the Kabeljou Flats or a records of birds flying high overhead. The mast-light records refer to nesting Pink-backed Pelicans (Fig. 28) as described by Allan et al. (2024) and also mentioned in Anchor Environmental Consultants & The Biodiversity Company (2023).



Fig. 26. Pink-backed Pelican (left) and Great White Pelican (right), both Red Data species⁶.



Fig. 27. Grey Plover (left) and Bar-tailed Godwit (right), both Red Data species⁷.

⁶ Flying high over the Berth 605 project area on 30 Jan. 2025 and 3 Dec. 2024 respectively.

⁷ At the Sand-spit Island during the 22 Jan. 2025 waterbird roost count.



Fig. 28. Pink-backed Pelicans on the tall light mast used for breeding on 3 Dec. 2024.

8 STUDY LIMITATIONS, INCLUDING ASSUMPTIONS AND UNCERTAINTIES/GAPS IN KNOWLEDGE

The information from SABAP2, a citizen-science initiative, is sensitive to sample sizes. Fortunately, the SABAP2 data used in this assessment are based on very large sample sizes for the two relevant pentads (801 and 274 full-protocol checklists) and thus likely highly reliable.

The existing baseline waterbird-count information covering Richards Bay harbour is similar fairly extensive, including a recent and comprehensive set of 16 counts from the harbour area (Anchor Environmental Consultants & The Biodiversity Company (2023). This last-mentioned dataset is especially valuable as Transnet National Ports Authority was not in a position to allow any full waterbird counts covering the entire harbour during the current assessment process. This deficiency was further compensated for at least partially by:

- A fairly detailed count (on 3 December 2024) made from the shoreline at low tide of the waterbirds in the Berth 605 project area and the Sand-spit Island. The Kabeljou Flat area could not be comprehensively covered though due to security concerns related to illegal trespassers gillnetting in this area (as mentioned above).
- A comprehensive count of waterbirds (on 22 January 2025) roosting on the Sand-spit Island was made at peak high tide through to low tide.

Relevant to the terrestrial avifauna on the site, three days were devoted to surveying the relatively small project area and immediate surrounds, which can be considered adequate coverage. Indeed over 100 bird species were recorded in the broader Berth 605 project area during the fieldwork.

All the fieldwork was conducted during the peak summer period, the best time to survey avifauna, especially relevant to migratory species such as shorebirds. The SABAP2 and baseline information spanned all seasons of the year.

9 POTENTIAL IMPACTS OF THE BERTH 605 DEVELOPMENT ON THE AVIFAUNA

The potential impacts of the Berth 605 development on the avifauna of the area are discussed below.

9.1 Terrestrial avifaunal habitats

The terrestrial avifauna habitats in the Berth 605 project footprint and immediately surrounding areas all comprise anthropogenically transformed areas. Some of these areas currently support infrastructure such as roads and buildings but the majority comprises secondary grassland and woodland that has established on ground previously cleared and otherwise transformed, e.g. old dump sites, during the initial creation of the Port of Richards Bay.

These sites currently support a terrestrial avifauna typical of such transformed and secondary habitats. These are typically common and widespread species, with no Red Data species (equivalent to Species of Conservation Concern) reliant on these habitats. The Berth 605 development is therefore not of significant avifaunal concern relevant to terrestrial bird species.

9.2 Aquatic avifaunal habitats

9.2.1 Mangrove patch and intertidal mudflat

The small, artificially-created mangrove patch surrounding a small intertidal mudflat (referred to as the tidally influenced pool in the Marine Ecology Assessment undertaken by the CSIR in 2025) in the Berth 605 project area (Fig. 29) comprises potential habitat for the Mangrove Kingfisher, a Red Data species (Table 7 and Table 8). This species was not encountered in the Berth 605 project area during the fieldwork for this assessment, but it is a winter visitor to the area and the fieldwork for this assessment was restricted to the summer period when the species is absent.

When this artificially created intertidal mudflat area was initially established it supported foraging shorebirds including the Curlew Sandpiper (pers. obs), another Red Data species. This mudflat though is now too closely encircled by the mangrove trees that have grown up around the mudflat to comprise suitable shorebird habitat.

This mangrove patch and associated intertidal mudflat is approximately 1.5 ha in size. It would be entirely transformed by the Berth 605 development, apparently initially being used as a temporary stockpile area and subsequently dredged to deep open water allowing access by ocean-going container ships.



Fig. 29. The Berth 605 project footprint showing: 1 - the artificially-created mangrove patch encircling an intertidal mudflat and 2 – the extent of semi-natural shoreline.

9.2.2 Shorelines

The semi-natural shorelines in the Berth 605 project area (Fig. 29) will be transformed by the dredging process and largely replaced by artificial concrete quaysides and rock revetment, although some semi-natural shoreline may apparently be retained/created along the southern fringe of the Berth 605 development area. The total length of semi-natural shoreline to be transformed is about 960 m.

Several species of shorebird were recorded using the existing semi-natural shorelines in the Berth 605 project area during the fieldwork for this assessment, i.e. White-fronted Plover, Common Sandpiper, Eurasian Whimbrel and Water Thick-knee (Table 4). It can be expected that a wider range of shorebirds (and other waterbirds) use this stretch of shoreline at least occasionally. Some of these are Red Data species, e.g. among the shorebirds Grey Plover, Eurasian Curlew, Bar-tailed Godwit, Ruddy Turnstone, Red Knot and Curlew Sandpiper (Table 7 and Table 8), two of which were recorded in the adjacent Sand-spit Island area during the fieldwork for this assessment (Table 9).

9.2.3 Sand-spit Island

The Sand-spit Island is one of the most critical waterbird habitats in Richards Bay harbour. It serves as a major roosting site for both shorebirds and terns and also provides foraging habitat for shorebirds. Many other waterbird species also utilize this habitat. Several of the waterbirds regularly present at this site are Red Data species, e.g. among the shorebirds Grey Plover, Eurasian Curlew, Bar-tailed Godwit, Ruddy Turnstone, Red Knot and Curlew Sandpiper, as well as Pink-back Pelican and Caspian Tern (Table 5).

Fortunately, the Berth 605 project development, although relatively close to the Sand-spit Island, seems far enough in distance to not significantly impact this habitat or disturb its associated waterbirds (Fig. 5).

9.2.4 Kabeljou Flats

The Kabeljou flats intertidal area is another one of the most critical waterbird habitats in Richards Bay harbour. It provides critical foraging habitat for wading waterbirds, especially shorebirds, including the same Red Data shorebirds already mentioned, i.e. Grey Plover, Eurasian Curlew, Bar-tailed Godwit, Ruddy Turnstone, Red Knot and Curlew Sandpiper.

As with the Sand-spit Island, the Kabeljou flats are relatively distant from the Berth 605 development (Fig. 5). In addition, this area is further shielded from the development footprint by a dry-land peninsula (as well as some mangrove areas and the westernmost part of the Sand-spit Island) between the two areas. The Berth 605 development therefore should not significantly impact the Kabeljou Flats or disturb its associated waterbirds.

9.3 Cumulative impacts

Fig. 30, as provided by WSP, provides an overview of proposed future initiatives in the Port of Richards Bay. Some 17 initiatives are mapped. These involve both terrestrial and aquatic habitats, with some, like the Berth 605 project, covering both habitat types. Projects 1, 2 and 15 are planned for the short term (within 5 years) and projects 9, 11 and 13 in the medium term.



Fig. 30. Overview of proposed future initiatives in the Port of Richards Bay.

This large number of planned initiatives suggests that a consideration of cumulative impacts is highly relevant in the context of the Berth 605 development. Where critical avifaunal habitat is to be lost to the Berth 605 development, this will contribute to any cumulative impact upon the Port of Richards Bay as a whole. This means that there is likely to be even greater pressure to compensate for such losses through measures such as offsets.

10 MITIGATION MEASURES

Recommended mitigation measures to ameliorate the potential impact of the Berth 605 development on the avifauna of the area are discussed below.

10.1 Terrestrial avifaunal habitats

Given that the Berth 605 development is not considered of significant avifaunal concern relevant to terrestrial bird species, no mitigation measures are considered necessary in this regard.

10.2 Aquatic avifaunal habitats

10.2.1 *Mangrove patch and intertidal mudflat*

The mangrove patch and associated intertidal mudflat would be entirely transformed by the Berth 605 development, initially being used as a temporary stockpile area and subsequently dredged to deep open water allowing access by ocean-going container ships. This transformation would seem unavoidable given the nature of the development. There would appear to be no mitigation measures in the form of avoidance, minimisation of magnitude, or rehabilitation/restoration that would be effective in the face of this habitat transformation by stockpiling/dredging, i.e. the residual impact would in essence equal the total impact.

The appropriate mitigation measure in these circumstances would appear to be offsetting, especially given that this area formally lies within an irreplaceable Critical Biodiversity Area and within an Estuarine Functional Zone. This means that an area, presumably equally to or larger than the 1.5 ha extent of this mangrove/intertidal patch, would have to be created, preferably in the existing Port of Richards Bay area but if necessary elsewhere, to compensate for the loss of this habitat patch to the Berth 605 development.

It is beyond the scope of this report to address the issue of such offsetting in detail. The map of proposed future initiatives in the Port of Richards Bay (Fig. 30) though also shows suggested areas in the port for potential development as sites for environmental offsets. Should one of these sites indeed be used as an offset for the lost mangrove/intertidal patch, the site would have to be subject to tidal influence, i.e. have a direct connection to the open marine waters of the harbour area. This suggests that areas in the north and extreme southwest of these proposed offset sites would be best placed in terms of a direct aquatic linkage to the harbour. These sites would also need to have a suitable substrate (deep mud or sand) to allow for the establishment of mangroves.

These proposed offset sites, however, would appear to currently support important natural habitats, e.g. wetlands and coastal forest and the transformation of these to a habitat comprising mangroves and intertidal mudflats as part of any offsets initiative may be entirely inappropriate. This suggests that some other area which is anthropogenically transformed within the Port of Richards Bay area will have to be identified as a suitable offset location. It might therefore be preferable to create such habitat by modifying the southern edge of the Berth 605 project footprint in this regard. Such a modification would extend into the secondary terrestrial habitats that are not considered of significant avifaunal concern and hence potentially appropriate for such offsetting. The general area for consideration of such potential offsetting is shown in (Fig. 31).

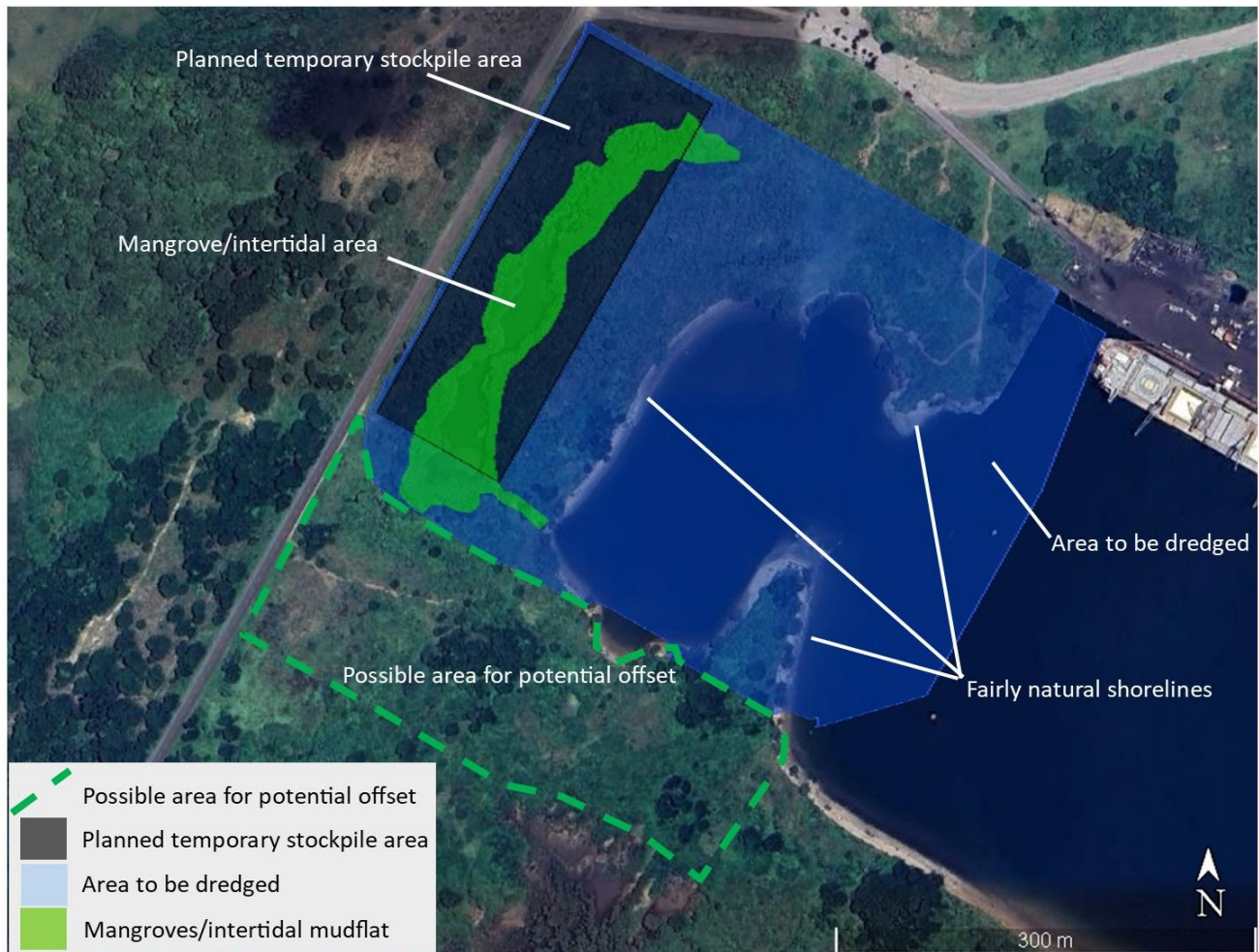


Fig. 31. Possible area for potential offsetting to compensate for residual impacts of Berth 605 development on the mangrove/intertidal patch and fairly natural shorelines.

10.2.2 Shorelines

A very similar position as to that discussed above relevant to the mangrove/intertidal patch pertains to the 960 m stretch of semi-natural shoreline present in the Berth 605 project area. It seems unavoidable that this shoreline will be largely transformed by the development through dredging and the construction of concrete quaysides and rock revetment. As with the mangrove/intertidal patch, there would appear to be little in the way of mitigation measures in the form of avoidance, minimisation of magnitude, or rehabilitation/restoration that would be effective in the face of this habitat transformation by dredging, i.e. the residual impact would be large. As such, the loss of this critical habitat also calls for compensation in the form of offsetting.

Such offsetting would require the creation of a similar or longer length of shoreline to compensate for the 960 m stretch lost to the Berth 605 development. There is some indication that the Berth 605 development could result in the retention/creation of some semi-natural shoreline along the southern edge of the development area. To the extent that this might be the case, the length of shoreline requiring offsetting could be reduced accordingly.

The simplest method of offsetting for the lost shoreline might be to modify the southern edge of the development area during the construction phase to create the necessary length of semi-natural shoreline, similar to the suggestion above related to offsetting relevant to the mangrove patch (Fig. 31). This would require that the entire existing 960 m stretch of shoreline be modified in creating this offset. Otherwise, a

stretch of shoreline would have to be created somewhere else, preferably within the Port of Richards Bay area but if necessary elsewhere. In the case of such shoreline offsetting, the rehabilitation of a stretch/es of shoreline in the harbour (or elsewhere) that have been previously transformed to an unnatural state could also be considered.

Such modification or restoration of tidal shoreline would fall within the area of wetland creation or restoration generally but with a focus on intertidal habitats (Atkinson 2003, Suding 2011). The term 'managed realignment' has been coined for the process very similar to that suggested here (Mander et al. 2007). There is a body of literature specifically devoted to establishing 'living shorelines' (National Oceanic and Atmospheric Administration 2015, Smith et al. 2020). These often focus particularly on using vegetation in shoreline environments but in the instance of the Berth 605 shoreline the recreation of an open unvegetated tidal shoreline would be envisioned, likely a simpler scenario. The shoreline to be created should have a very flat slope and be as wide as possible to maximise the intertidal area of this shoreline. It should in essence be very similar to the current shoreline in this area (see Fig. 10). This shoreline offset is similar in concept to the intertidal sandflat offset involving the creation of new intertidal habitat to replace that lost to dredging in the Port of Durban Bay (Porter et al. 2012).

10.2.3 Sand-spit Island

Due to the Berth 605 project area being considered distant enough from the Sand-spit Island not to significantly impact the island or disturb its associated waterbirds, no mitigation measures are considered necessary.

10.2.4 Kabeljou Flats

Similar to the position with the Sand-spit Island, the Berth 605 development is considered sufficiently distant and shielded from the Kabeljou Flats intertidal mudflat so as not to significantly impact this habitat or disturb its associated waterbirds and as such no mitigation measures are considered necessary.

10.3 Cumulative impacts

As mentioned above, the large number of planned initiatives in the Port of Richards Bay likely makes the need for appropriate mitigation, i.e. offsetting in this instance, even more pressing. Where critical avifaunal habitat is to be lost to the Berth 605 development, this will contribute to any cumulative impact upon the Port of Richards Bay as a whole. This means that there is likely to be even greater pressure to compensate for such losses through measures such as offsets.

11 IMPACT ASSESSMENT TABLES

Table 10 presents impact assessment tables relevant to the impacts and mitigation measures discussed above (template provided by WSP). The following points are relevant to determining the scores allocated in these tables:

- The scores allocated for the construction and operational phases of the Berth 605 project are deemed essentially identical as both phases are considered likely to have similar impacts on the avifauna.
- A decommissioning phase for a development such as this is deemed unlikely and so the same scores are allocated as to the construction and operational phases of the development.
- No mitigation measures are recommended for three of the impacts (transformation of terrestrial avifaunal habitats, and disturbance to Sand-spit Island and Kabeljou Flats) and therefore the pre- and post-mitigation scores are identical for these three impacts.
- The scores allocated for the cumulative section of the impact tables are higher than for the construction and operational (and decommissioning) phases of the development as it is deemed that the large number of planned additional developments in the Port of Richards Bay call for higher scores in some cases relevant to some impacts. This is based on the consideration that where critical avifaunal habitat is

to be lost to the Berth 605 development, this will contribute to any cumulative impact upon the Port of Richards Bay as a whole.

Table 10. Impact assessment tables relevant to the Berth 605 project for the five identified potential impacts to avifauna considered separately for the construction, operational and decommissioning phases, as well as relevant to cumulative impacts in the Port of Richards Bay generally related to some 17 other planned initiatives in the harbour area.

CONSTRUCTION

Impact number	Aspect	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation						Rating	Post-Mitigation						Rating
						(M+)	E+	R+	D)x	P=	S		(M+)	E+	R+	D)x	P=	S	
Impact 1:	Avifauna	Transformation of terrestrial avifaunal habitat	Construction	Negative	No mitigation required	4	1	3	5	3	39	N3	4	1	3	5	3	39	N3
Significance						N3 - Moderate							N3 - Moderate						
Impact 2:	Avifauna	Transformation of mangrove patch and associated intertidal mudflat	Construction	Negative	Mitigation difficult as offset required	5	1	3	5	5	70	N4	2	1	3	5	3	33	N3
Significance						N4 - High							N3 - Moderate						
Impact 3:	Avifauna	Transformation of semi-natural shoreline	Construction	Negative	Mitigation difficult as offset required	4	1	3	5	5	65	N4	2	1	3	5	3	33	N3
Significance						N4 - High							N3 - Moderate						
Impact 4:	Avifauna	Disturbance to Sand-spit Island	Construction	Negative	No mitigation required	1	2	3	4	1	10	N1	1	2	3	4	1	10	N1
Significance						N1 - Very Low							N1 - Very Low						
Impact 5:	Avifauna	Disturbance to Kabeljou Flats	Construction	Negative	No mitigation required	1	2	3	4	1	10	N1	1	2	3	4	1	10	N1
Significance						N1 - Very Low							N1 - Very Low						

OPERATIONAL

Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation						Rating	Post-Mitigation						Rating
						(M+)	E+	R+	D)x	P=	S		(M+)	E+	R+	D)x	P=	S	
Impact 1:	Avifauna	Transformation of terrestrial avifaunal habitat	Operational	Negative	No mitigation required	4	1	3	5	3	39	N3	4	1	3	5	3	39	N3
Significance						N3 - Moderate							N3 - Moderate						
Impact 2:	Avifauna	Transformation of mangrove patch and associated intertidal mudflat	Operational	Negative	Mitigation difficult as offset required	5	1	3	5	5	70	N4	2	1	3	5	3	33	N3
Significance						N4 - High							N3 - Moderate						
Impact 3:	Avifauna	Transformation of semi-natural shoreline	Operational	Negative	Mitigation difficult as offset required	4	1	3	5	5	65	N4	2	1	3	5	3	33	N3
Significance						N4 - High							N3 - Moderate						
Impact 4:	Avifauna	Disturbance to Sand-spit Island	Operational	Negative	No mitigation	1	2	3	4	1	10	N1	1	2	3	4	1	10	N1

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

					required														
					Significance	N1 - Very Low							N1 - Very Low						
Impact 5:	Avifauna	Disturbance to Kabeljou Flats	Operational	Negative	No mitigation required	1	2	3	4	1	10	N1	1	2	3	4	1	10	N1
					Significance	N1 - Very Low							N1 - Very Low						
DECOMMISSIONING																			
Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation							Post-Mitigation						
						(M+	E+	R+	D)x	P=	S		(M+	E+	R+	D)x	P=	S	
Impact 1:	Avifauna	Transformation of terrestrial avifaunal habitat	Decommissioning	Negative	No mitigation required	4	1	3	5	3	39	N3	4	1	3	5	3	39	N3
					Significance	N3 - Moderate							N3 - Moderate						
Impact 2:	Avifauna	Transformation of mangrove patch and associated intertidal mudflat	Decommissioning	Negative	Mitigation difficult as offset required	5	1	3	5	5	70	N4	2	1	3	5	3	33	N3
					Significance	N4 - High							N3 - Moderate						
Impact 3:	Avifauna	Transformation of semi-natural shoreline	Decommissioning	Negative	Mitigation difficult as offset required	4	1	3	5	5	65	N4	2	1	3	5	3	33	N3
					Significance	N4 - High							N3 - Moderate						
Impact 4:	Avifauna	Disturbance to Sand-spit Island	Decommissioning	Negative	No mitigation required	1	2	3	4	1	10	N1	1	2	3	4	1	10	N1
					Significance	N1 - Very Low							N1 - Very Low						
Impact 5:	Avifauna	Disturbance to Kabeljou Flats	Decommissioning	Negative	No mitigation required	1	2	3	4	1	10	N1	1	2	3	4	1	10	N1
					Significance	N1 - Very Low							N1 - Very Low						
CUMULATIVE																			
Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation							Post-Mitigation						
						(M+	E+	R+	D)x	P=	S		(M+	E+	R+	D)x	P=	S	
Impact 1:	Avifauna	Transformation of terrestrial avifaunal habitat	Cumulative	Negative	No mitigation required	4	2	3	5	4	56	N3	4	2	3	5	4	56	N3
					Significance	N3 - Moderate							N3 - Moderate						
Impact 2:	Avifauna	Transformation of mangrove patch and associated intertidal mudflat	Cumulative	Negative	Mitigation difficult as offset required	5	2	3	5	5	75	N4	2	2	3	5	4	48	N3
					Significance	N4 - High							N3 - Moderate						
Impact 3:	Avifauna	Transformation of semi-natural shoreline	Cumulative	Negative	Mitigation difficult as offset required	4	2	3	5	5	70	N4	2	2	3	5	4	48	N3

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Significance						N4 - High							N3 - Moderate						
Impact 4:	Avifauna	Disturbance to Sand-spit Island	Cumulative	Negative	No mitigation required	1	2	3	4	3	30	N2	1	2	3	4	3	30	N2
Significance						N2 - Low							N2 - Low						
Impact 5:	Avifauna	Disturbance to Kabeljou Flats	Cumulative	Negative	No mitigation required	1	2	3	4	3	30	N2	1	2	3	4	3	30	N2
Significance						N2 - Low							N2 - Low						

12 CONCLUSIONS AND REASONED OPINION

This avifaunal assessment of the Berth 605 project identifies five areas of potential concern relevant to avifauna:

- The impact on the terrestrial avifauna, is not considered of high significance and is not thought to require any mitigation.
- Two others, the potential impact on the Sand-spit Island and the Kabeljou Flats, are considered of high significance but are also considered unlikely to manifest due to the distance between these two areas and the project footprint and thus also do not call for any mitigation measures.
- The final two aspects, the impact on the mangrove patch and on the 960 m stretch of semi-natural shoreline, both in the project footprint, are considered of high significance and to require mitigation. The appropriate mitigation measures in both instances would appear to be offsetting as there and would appear to be no mitigation measures in the form of avoidance, minimisation of magnitude, or rehabilitation/restoration that would be effective in the face of this habitat transformation by stockpiling/dredging, i.e. the residual impact would large. Such offsetting may be possible directly adjacent to the project footprint, which would likely facilitate the implementation of these measures. Otherwise, the offsets will have to be located elsewhere, preferably still in the Port of Richards Bay but if necessary at another location. In the case of semi-natural shoreline, there may be the potential for rehabilitating shoreline in the Port area that has been transformed to a totally unnatural state, rather than creating new semi-natural shoreline.

Provided the recommended mitigation measures (offsetting) are implemented, there would appear no justification from an avifaunal perspective to deny the Berth 605 project authorization.

13 REFERENCES

- Atkinson, P.W. 2003. Can we recreate or restore intertidal habitats for shorebirds? *Wader Study Group Bulletin* 100: 67-72.
- Anchor Environmental Consultants & The Biodiversity Company. 2023. Proposed Gas to Power Powership Project at the Port of Richards Bay, uMhlathuze Local Municipality, KwaZulu-Natal. Specialist Study on Birds. Report prepared for Triplo4 Sustainable Solutions.
- Allan, D.G. 2009. Avifaunal assessment for the proposed geotechnical studies to be conducted in the Port of Richards Bay, KwaZulu-Natal. Durban Natural Science Museum Bird Department Research Report 33: 1-40. (Contract from ACER (Africa) for Transnet Capital Projects).
- Allan, D.G., Clark, B. & Cooke, M. 2024. Any port... *African Birdlife* 13(1): 18-19.
- Allan, D.G. & McInnes, A. 2002. Richards Bay waterbird survey - January 2002 interim report. *Durban Natural Science Museum - Bird Department Research Report* 14: 1-40.
- Gill, F., Donsker, D. & Rasmussen, P. (eds). 2025. IOC World Bird List (v 15.1). Doi 10.14344/IOC.ML.15.1. <http://www.worldbirdnames.org/>.
- Begg, G. 1978. The estuaries of Natal. Pietermaritzburg: Natal Town and Regional Planning Commission.
- Mander, L., Nicholas, D.C., Allen, J. & Mazik, K. 2007. Assessing the development of newly created habitat for wintering estuarine birds. *Estuarine, Coastal and Shelf Science* 75: 163-174.
- Marnewick M.D., Retief E.F., Theron N.T., Wright D.R. & Anderson T.A. 2015. Important Bird and Biodiversity Areas of South Africa. Johannesburg: BirdLife South Africa.
- National Oceanic and Atmospheric Administration. 2015. Natural and structural measures for shoreline stabilization. 7 pp.
- Porter, S., Clark, B. & Turpie, J. 2012. Avifauna specialist study for an EIA for deepening, lengthening and widening of Berth 203 to 205, Pier 2, Container Terminal, in the Durban Bay. Anchor Environmental for Nema Consulting. 52 pp.
- Ryan, P.G., Cooper, J., Hockey, P.A.R. & Berruti, A. 1986. Waders (Charadrii) and other water birds on the coast and adjacent wetlands of Natal, 1980-81. *Lammergeyer* 36: 1-33.
- Smith CS, Rudd ME, Gittman RK., Melvin EC, Patterson VS, Renzi JJ, Wellman EH and Silliman BR (2020). Coming to Terms With Living Shorelines: A Scoping Review of Novel Restoration Strategies for Shoreline Protection. *Front. Mar. Sci.* 7: 434. doi: 10.3389/fmars.2020.00434.
- SANBI (South African National Biodiversity Institute). 2020. Species Environmental Assessment Guideline. Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa. South African National Biodiversity Institute, Pretoria. Version 3.1. 2022. 256 pp.
- Suding, K.N. 2011. Towards an era of restoration in ecology: successes, failures and opportunities ahead. *Annu. Rev. Ecol. Evol. Syst.* 42: 465–87

- Taylor, M.R., Peacock, F. & Wanless, R. (eds). 2015. The 2015 Eskom red data book of birds in South Africa, Lesotho and Swaziland. BirdLife South Africa: Johannesburg.

14 SPECIALIST DECLARATION

14.1 Details of the avian specialist – David G. Allan

Registered with the South African Council for Natural Scientific Professions as a Pr. Sci. Nat. (Zoology) - Registration No. 115499

14.1.1 Ornithological research experience

The avian specialist has over four decades of professional ornithological research, conservation and consulting experience. He was a Nature Conservation Officer/Scientist with the former Transvaal Provincial Division of Nature Conservation during the periods 1979 and 1982-1987. During 1987-1996 he worked as a Research Officer and Senior Scientific Officer at the FitzPatrick Institute of African Ornithology and Avian Demography Unit, University of Cape Town. During 1996-2021 he was the Curator of Birds and Head of the Bird Department at the Durban Natural Science Museum (including Acting Director of the Durban Natural Science Museum during 2010). From 2021 to date he has worked as a full-time Avifaunal Specialist Consultant. His highest qualification is an MSc (cum laude) (Zoology) – 1994 (University of Cape Town). He is a long-serving member of the Birds and Renewable Energy Specialist Group (BARESG) coordinated by BirdLife South Africa and the Endangered Wildlife Trust. He is a Research Associate of the FitzPatrick Institute of African Ornithology, University of Cape Town. He has received the following professional awards: John F.W. Herschel Gold Medal (Royal Society of SA) – 1999, Steven Piper Lifetime Achievement Award (Endangered Wildlife Trust) – 2014 and Gill Memorial Medal Award (BirdLife South Africa) – 2022.

14.1.2 Countries worked in

Most research and assessment has been conducted in South Africa and Lesotho but an appreciable amount has also involved intensive field surveys in other African states including Botswana, Namibia, Mozambique, Eswatini (Swaziland), Malawi, Ethiopia and Mauritius.

14.1.3 Presentation of research and specialist assessment findings

Publications: 227 formal scientific publications and 465 semi-popular publications, including books, book chapters, booklets, species accounts in bird handbooks, scientific papers, semi-popular articles, newspaper articles, poster texts, etc.

Avifaunal Specialist Reports as part of Environmental Impact Assessments: over 100.

Conferences: 73 conferences/workshops attended and oral/poster presentations given at most of these.

14.1.4 Collaborative research and assessment

Current and past involvement with a wide range of collaborators and clients including the University of Cape Town, Ezemvelo KZN Wildlife, BirdLife South Africa, Endangered Wildlife Trust, Maloti Drakensberg Transfrontier Project, Lesotho Highlands Development Authority (LHDA), Transnet National Ports Authority (TNPA), Airports Company of South Africa (ACSA), South African National Roads Agency (SANRAL), ESKOM, Umgeni Water and South African Council for Scientific and Industrial Research (CSIR).

14.1.5 Specialist avifaunal assessment experience

Since 1989, he has been involved in over 100 avifaunal specialist investigations concerned with Environmental Impact Assessments covering a wide range of developments including: renewable energy projects including both wind and solar power, commercial afforestation, agricultural cultivation schemes, mines, vanadium processing plants, dams, water-extraction schemes, water tunnels, harbour developments, estuary water-reserve assessments, waste-water treatment works, water-pollution assessments, nuclear and coal-fired power stations, airports, roads, crude-oil and gas pipelines, power lines and sub-stations, telecommunication towers, residential and industrial developments, quarries, ecotourism assessments, outdoor music festivals, racecourses, cableways and zip-lines, problem-animal control and the impact of beach-driving on birds.

14.2 Specialist Declaration of Independence - David G. Allan

I, David G. Allan, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of specialist

Date: 16 April 2025

Appendix 1. Details of the 362 bird species recorded in the two Southern African Bird Atlas Project 2 (SABAP2) pentads containing the Berth 605 Project Areas of Influence (PAOI, 2845_3200 and 2845_3205) as taken from 1390 bird checklists submitted for these two pentads combined. The data are presented separately for 'Full Protocol' and 'Ad hoc' checklists and reflect both reporting ('Rep.') rates and the total number of records for each of these two checklist types. Also listed are the 108 species recorded during field surveys for this assessment.

Common name	Scientific name	Full protocol		Ad hoc protocol		This assessment
		Rep. rate	No. recs	Rep. rate	No. recs	
Apalis, Bar-throated	<i>Apalis thoracica</i>	2,0	21	0,3	1	
Apalis, Rudd's	<i>Apalis ruddi</i>	14,6	157	5,5	17	X
Apalis, Yellow-breasted	<i>Apalis flavida</i>	44,2	475	17,7	55	X
Avocet, Pied	<i>Recurvirostra avosetta</i>	2,3	25	0,3	1	
Barbet, Acacia Pied	<i>Tricholaema leucomelas</i>	0,3	3	0,3	1	
Barbet, Black-collared	<i>Lybius torquatus</i>	66,7	717	26,5	82	X
Barbet, Crested	<i>Trachyphonus vaillantii</i>	14,0	151	2,6	8	
Barbet, White-eared	<i>Stactolaema leucotis</i>	78,3	842	36,5	113	X
Batis, Chinspot	<i>Batis molitor</i>	1,5	16	0,0	0	
Bee-eater, Blue-cheeked	<i>Merops persicus</i>	34,2	368	11,6	36	X
Bee-eater, European	<i>Merops apiaster</i>	0,9	10	0,6	2	
Bee-eater, Little	<i>Merops pusillus</i>	20,9	225	4,2	13	X
Bee-eater, White-fronted	<i>Merops bullockoides</i>	1,8	19	0,6	2	
Bittern, Little	<i>Ixobrychus minutus</i>	4,4	47	1,3	4	
Boubou, Southern	<i>Laniarius ferrugineus</i>	40,1	431	17,4	54	X
Brownbul, Terrestrial	<i>Phyllastrephus terrestris</i>	12,8	138	5,8	18	
Brubru	<i>Nilaus afer</i>	0,8	9	0,0	0	
Bulbul, Dark-capped	<i>Pycnonotus tricolor</i>	89,9	966	54,5	169	X
Bunting, Cinnamon-breasted	<i>Emberiza tahapisi</i>	0,2	2	0,0	0	
Bunting, Golden-breasted	<i>Emberiza flaviventris</i>	0,3	3	0,0	0	
Bushshrike, Gorgeous	<i>Telophorus viridis</i>	19,4	209	7,1	22	
Bushshrike, Grey-headed	<i>Malaconotus blanchoti</i>	1,2	13	0,0	0	
Bushshrike, Olive	<i>Chlorophoneus olivaceus</i>	1,1	12	0,3	1	
Bushshrike, Orange-breasted	<i>Chlorophoneus sulfureopectus</i>	2,0	21	0,0	0	
Bustard, Black-bellied	<i>Lissotis melanogaster</i>	0,2	2	0,0	0	
Bustard, Denham's	<i>Neotis denhami</i>	0,5	5	0,0	0	
Buttonquail, Common	<i>Turnix sylvaticus</i>	2,1	23	0,0	0	
Buzzard, Common	<i>Buteo buteo</i>	2,6	28	0,3	1	X
Buzzard, European Honey	<i>Pernis apivorus</i>	1,4	15	0,3	1	X
Buzzard, Jackal	<i>Buteo rufofuscus</i>	0,2	2	0,0	0	
Buzzard, Lizard	<i>Kaupifalco monogrammicus</i>	0,5	5	0,0	0	
Camaroptera, Green-backed	<i>Camaroptera brachyura</i>	72,7	781	32,3	100	X
Canary, Brimstone	<i>Crithagra sulphurata</i>	21,0	226	4,5	14	X
Canary, Cape	<i>Serinus canicollis</i>	1,5	16	0,0	0	
Canary, Yellow-fronted	<i>Crithagra mozambica</i>	73,5	790	24,2	75	X
Chat, Familiar	<i>Oenanthe familiaris</i>	0,3	3	0,0	0	
Cisticola, Croaking	<i>Cisticola natalensis</i>	0,7	8	0,0	0	
Cisticola, Lazy	<i>Cisticola aberrans</i>	0,6	6	0,0	0	
Cisticola, Pale-crowned	<i>Cisticola cinnamomeus</i>	0,2	2	0,0	0	
Cisticola, Rattling	<i>Cisticola chiniana</i>	56,9	612	16,8	52	X
Cisticola, Red-faced	<i>Cisticola erythrops</i>	3,0	32	0,0	0	
Cisticola, Rufous-winged	<i>Cisticola galactotes</i>	22,2	239	4,5	14	X
Cisticola, Zitting	<i>Cisticola juncidis</i>	21,4	230	7,4	23	
Coot, Red-knobbed	<i>Fulica cristata</i>	5,1	55	1,0	3	
Cormorant, Cape	<i>Phalacrocorax capensis</i>	1,8	19	0,6	2	
Cormorant, Reed	<i>Microcarbo africanus</i>	63,5	683	29,7	92	
Cormorant, White-breasted	<i>Phalacrocorax lucidus</i>	36,0	387	10,6	33	
Coucal, Burchell's	<i>Centropus burchellii</i>	58,0	624	20,3	63	X
Courser, Bronze-winged	<i>Rhinoptilus chalcophterus</i>	1,0	11	0,0	0	
Crab Plover	<i>Dromas ardeola</i>	0,3	3	0,0	0	
Crake, African	<i>Crex egregia</i>	0,9	10	0,3	1	
Crake, Baillon's	<i>Zaporina pusilla</i>	0,1	1	0,0	0	
Crake, Black	<i>Zaporina flavirostra</i>	42,2	454	14,2	44	
Crane, Grey Crowned	<i>Balearica regulorum</i>	0,5	5	0,0	0	
Crombec, Long-billed	<i>Sylvietta rufescens</i>	1,7	18	0,0	0	
Crow, Cape	<i>Corvus capensis</i>	0,1	1	0,0	0	
Crow, House	<i>Corvus splendens</i>	0,2	2	0,3	1	
Crow, Pied	<i>Corvus albus</i>	58,2	626	25,8	80	X
Cuckoo, African Emerald	<i>Chrysococcyx cupreus</i>	4,3	46	1,3	4	
Cuckoo, Black	<i>Cuculus clamosus</i>	1,4	15	0,0	0	
Cuckoo, Common	<i>Cuculus canorus</i>	0,3	3	0,0	0	
Cuckoo, Diederik	<i>Chrysococcyx caprius</i>	28,9	311	8,4	26	X

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Common name	Scientific name	Full protocol		Ad hoc protocol		This assessment
		Rep. rate	No. recs	Rep. rate	No. recs	
Cuckoo, Jacobin	<i>Clamator jacobinus</i>	0,6	6	0,0	0	
Cuckoo, Klaas's	<i>Chrysococcyx klaas</i>	14,6	157	1,9	6	
Cuckoo, Red-chested	<i>Cuculus solitarius</i>	5,6	60	1,0	3	
Cuckoo-Hawk, African	<i>Aviceda cuculoides</i>	0,4	4	0,0	0	
Cuckooshrike, Black	<i>Campephaga flava</i>	5,1	55	0,6	2	
Cuckooshrike, Grey	<i>Coracina caesia</i>	0,1	1	0,0	0	
Curlew, Eurasian	<i>Numenius arquata</i>	1,9	20	1,0	3	
Darter, African	<i>Anhinga rufa</i>	30,4	327	14,5	45	
Dove, Laughing	<i>Spilopelia senegalensis</i>	57,5	618	17,7	55	
Dove, Lemon	<i>Columba larvata</i>	3,3	35	1,6	5	
Dove, Namaqua	<i>Oena capensis</i>	0,5	5	0,0	0	
Dove, Red-eyed	<i>Streptopelia semitorquata</i>	88,7	953	45,2	140	X
Dove, Ring-necked	<i>Streptopelia capicola</i>	2,2	24	0,6	2	
Dove, Rock	<i>Columba livia</i>	38,0	408	9,7	30	X
Dove, Tambourine	<i>Turtur tympanistria</i>	49,0	527	18,7	58	X
Drongo, Common Square-tailed	<i>Dicrurus ludwigii</i>	7,8	84	2,9	9	
Drongo, Fork-tailed	<i>Dicrurus adsimilis</i>	24,3	261	1,9	6	
Duck, African Black	<i>Anas sparsa</i>	0,7	7	0,3	1	
Duck, Fulvous Whistling	<i>Dendrocygna bicolor</i>	0,8	9	0,3	1	
Duck, White-backed	<i>Thalassornis leuconotus</i>	3,3	36	7,1	22	
Duck, White-faced Whistling	<i>Dendrocygna viduata</i>	23,0	247	11,0	34	X
Duck, Yellow-billed	<i>Anas undulata</i>	29,5	317	7,4	23	X
Eagle, Crowned	<i>Stephanoaetus coronatus</i>	1,8	19	2,6	8	
Eagle, Long-crested	<i>Lophaelus occipitalis</i>	20,0	215	2,9	9	
Eagle, Tawny	<i>Aquila rapax</i>	0,1	1	0,0	0	
Eagle, Wahlberg's	<i>Hieraaetus wahlbergi</i>	0,1	1	0,0	0	
Eagle-Owl, Spotted	<i>Bubo africanus</i>	6,9	74	4,8	15	
Egret, Great	<i>Ardea alba</i>	15,0	161	2,9	9	
Egret, Intermediate	<i>Ardea intermedia</i>	2,0	22	1,3	4	
Egret, Little	<i>Egretta garzetta</i>	47,4	510	13,5	42	X
Egret, Western Cattle	<i>Bubulcus ibis</i>	21,8	234	10,6	33	
Falcon, Amur	<i>Falco amurensis</i>	0,1	1	0,0	0	
Falcon, Lanner	<i>Falco biarmicus</i>	1,9	20	1,6	5	
Falcon, Peregrine	<i>Falco peregrinus</i>	3,2	34	0,0	0	
Finfoot, African	<i>Podica senegalensis</i>	2,9	31	0,6	2	
Firefinch, African	<i>Lagonosticta rubricata</i>	11,9	128	2,3	7	
Firefinch, Red-billed	<i>Lagonosticta senegalensis</i>	14,0	150	4,5	14	
Fiscal, Southern	<i>Lanius collaris</i>	65,6	705	20,6	64	X
Fish Eagle, African	<i>Haliaeetus vocifer</i>	71,5	769	32,9	102	X
Flamingo, Greater	<i>Phoenicopterus roseus</i>	13,0	140	1,9	6	
Flamingo, Lesser	<i>Phoeniconaias minor</i>	0,4	4	0,0	0	
Flufftail, Buff-spotted	<i>Sarothrura elegans</i>	0,8	9	0,6	2	
Flufftail, Red-chested	<i>Sarothrura rufa</i>	0,4	4	0,0	0	
Flycatcher, African Dusky	<i>Muscicapa adusta</i>	30,7	330	10,0	31	
Flycatcher, African Paradise	<i>Terpsiphone viridis</i>	11,3	121	2,3	7	
Flycatcher, Ashy	<i>Muscicapa caerulescens</i>	3,8	41	2,6	8	
Flycatcher, Blue-mantled Crested	<i>Trochocercus cyanomelas</i>	1,0	11	0,3	1	
Flycatcher, Fiscal	<i>Melaenornis silens</i>	7,3	79	0,3	1	
Flycatcher, Pale	<i>Melaenornis pallidus</i>	0,2	2	0,0	0	
Flycatcher, Southern Black	<i>Melaenornis pammellina</i>	38,3	412	11,6	36	
Flycatcher, Spotted	<i>Muscicapa striata</i>	8,9	96	1,6	5	
Frigatebird, Lesser	<i>Fregata ariel</i>	0,7	7	0,6	2	
Gallinule, Allen's	<i>Porphyrio alleni</i>	0,8	9	0,0	0	
Gannet, Cape	<i>Morus capensis</i>	0,9	10	1,0	3	
Godwit, Bar-tailed	<i>Limosa lapponica</i>	3,4	37	0,6	2	X
Goose, African Pygmy	<i>Nettion auritus</i>	5,6	60	6,5	20	
Goose, Egyptian	<i>Alopochen aegyptiaca</i>	56,3	605	23,2	72	X
Goose, Spur-winged	<i>Plectropterus gambensis</i>	34,8	374	9,0	28	X
Goshawk, African	<i>Accipiter tachiro</i>	19,7	212	5,8	18	
Grassbird, Fan-tailed	<i>Schoenicola brevirostris</i>	0,2	2	0,0	0	
Grebe, Little	<i>Tachybaptus ruficollis</i>	14,1	152	9,0	28	
Greenbul, Sombre	<i>Andropadus importunus</i>	75,1	807	38,4	119	X
Greenbul, Yellow-bellied	<i>Chlorocichla flaviventris</i>	62,7	674	26,1	81	X
Greenshank, Common	<i>Tringa nebularia</i>	18,0	193	3,5	11	X
Grey Shrike, Lesser	<i>Lanius minor</i>	0,2	2	0,0	0	
Ground Thrush, Spotted	<i>Geokichla guttata</i>	0,2	2	0,3	1	
Guineafowl, Crested	<i>Guttera pucherani</i>	0,7	8	0,0	0	
Guineafowl, Helmeted	<i>Numida meleagris</i>	1,9	20	1,3	4	
Gull, Franklin's	<i>Leucophaea pipixcan</i>	0,2	2	0,3	1	

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Common name	Scientific name	Full protocol		Ad hoc protocol		This assessment
		Rep. rate	No. recs	Rep. rate	No. recs	
Gull, Grey-headed	<i>Chroicocephalus cirrocephalus</i>	65,7	706	31,9	99	X
Gull, Hartlaub's	<i>Chroicocephalus hartlaubii</i>	0,7	8	0,0	0	
Gull, Kelp	<i>Larus dominicanus</i>	27,7	298	8,7	27	
Hamerkop	<i>Scopus umbretta</i>	19,3	208	3,5	11	
Harrier, African Marsh	<i>Circus ranivorus</i>	11,3	122	1,0	3	
Harrier-Hawk, African	<i>Polyboroides typus</i>	15,1	162	6,1	19	
Hawk-Eagle, Ayres's	<i>Hieraaetus ayresii</i>	0,6	6	0,6	2	
Heron, Black	<i>Egretta ardesiaca</i>	0,1	1	0,0	0	
Heron, Black-headed	<i>Ardea melanocephala</i>	27,0	290	10,0	31	
Heron, Goliath	<i>Ardea goliath</i>	23,1	248	4,5	14	X
Heron, Grey	<i>Ardea cinerea</i>	48,7	524	11,9	37	X
Heron, Purple	<i>Ardea purpurea</i>	26,4	284	8,7	27	
Heron, Rufous-bellied	<i>Ardeola rufiventris</i>	0,2	2	0,6	2	
Heron, Squacco	<i>Ardeola ralloides</i>	20,9	225	2,9	9	
Heron, Striated	<i>Butorides striata</i>	21,9	235	6,8	21	
Hobby, Eurasian	<i>Falco subbuteo</i>	0,2	2	0,0	0	
Honeybird, Brown-backed	<i>Prodotiscus regulus</i>	0,9	10	0,3	1	
Honeyguide, Greater	<i>Indicator indicator</i>	0,6	6	0,0	0	
Honeyguide, Lesser	<i>Indicator minor</i>	14,0	151	5,5	17	
Honeyguide, Scaly-throated	<i>Indicator variegatus</i>	8,8	95	7,1	22	
Hoopoe, African	<i>Upupa africana</i>	5,7	61	3,5	11	
Hornbill, Crowned	<i>Lophoceros alboterminatus</i>	0,2	2	0,6	2	
Hornbill, Trumpeter	<i>Bycanistes bucinator</i>	42,2	454	18,4	57	
House Martin, Common	<i>Delichon urbicum</i>	0,5	5	0,3	1	
Ibis, African Sacred	<i>Threskiornis aethiopicus</i>	2,7	29	0,6	2	
Ibis, Glossy	<i>Plegadis falcinellus</i>	5,4	58	0,0	0	
Ibis, Hadada	<i>Bostrychia hagedash</i>	84,7	911	45,8	142	X
Indigobird, Dusky	<i>Vidua funerea</i>	5,4	58	0,3	1	
Indigobird, Village	<i>Vidua chalybeata</i>	0,3	3	0,0	0	
Jacana, African	<i>Actophilornis africanus</i>	45,8	492	21,0	65	X
Jacana, Lesser	<i>Microparra capensis</i>	2,0	22	0,3	1	
Kingfisher, Brown-hooded	<i>Halcyon albiventris</i>	59,0	634	20,0	62	
Kingfisher, Giant	<i>Megaceryle maxima</i>	31,3	336	7,1	22	X
Kingfisher, Half-collared	<i>Alcedo semitorquata</i>	1,9	20	1,0	3	
Kingfisher, Malachite	<i>Corythornis cristatus</i>	35,1	377	9,7	30	X
Kingfisher, Mangrove	<i>Halcyon senegaloides</i>	3,8	41	0,3	1	
Kingfisher, Pied	<i>Ceryle rudis</i>	70,8	761	20,0	62	X
Kingfisher, Striped	<i>Halcyon chelicuti</i>	0,7	7	0,3	1	
Kite, Black	<i>Milvus migrans</i>	0,2	2	0,0	0	
Kite, Black-winged	<i>Elanus caeruleus</i>	3,0	32	0,3	1	
Kite, Yellow-billed	<i>Milvus aegyptius</i>	50,0	538	22,9	71	X
Knot, Red	<i>Calidris canutus</i>	0,3	3	0,0	0	
Lapwing, African Wattled	<i>Vanellus senegallus</i>	0,3	3	0,0	0	
Lapwing, Blacksmith	<i>Vanellus armatus</i>	45,0	484	10,0	31	
Lapwing, Black-winged	<i>Vanellus melanopterus</i>	0,4	4	0,3	1	
Lapwing, Crowned	<i>Vanellus coronatus</i>	33,6	361	11,0	34	
Lark, Rufous-naped	<i>Mirafra africana</i>	14,2	153	0,3	1	
Lark, Sabota	<i>Calendulauda sabota</i>	0,7	8	0,0	0	
Longclaw, Cape	<i>Macronyx capensis</i>	0,1	1	0,0	0	
Longclaw, Yellow-throated	<i>Macronyx croceus</i>	50,6	544	12,6	39	X
Malkoha, Green	<i>Ceuthmochares australis</i>	7,3	79	2,9	9	
Mallard	<i>Anas platyrhynchos</i>	0,2	2	0,0	0	
Mannikin, Bronze	<i>Lonchura cucullata</i>	72,7	782	29,0	90	
Mannikin, Red-backed	<i>Lonchura nigriceps</i>	5,3	57	1,6	5	
Martin, Banded	<i>Neophedina cincta</i>	0,5	5	0,0	0	
Martin, Brown-throated	<i>Riparia paludicola</i>	40,4	434	6,1	19	
Martin, Rock	<i>Ptyonoprogne fuligula</i>	2,6	28	1,3	4	X
Martin, Sand	<i>Riparia riparia</i>	0,7	7	0,3	1	
Moorhen, Common	<i>Gallinula chloropus</i>	36,6	393	11,9	37	X
Mousebird, Red-faced	<i>Urocolius indicus</i>	3,7	40	0,6	2	
Mousebird, Speckled	<i>Colius striatus</i>	62,5	672	18,7	58	X
Myna, Common	<i>Acridotheres tristis</i>	78,2	841	40,0	124	X
Neddicky	<i>Cisticola fulvicapilla</i>	4,9	53	0,0	0	
Nicator, Eastern	<i>Nicator gularis</i>	4,4	47	1,6	5	
Night Heron, Black-crowned	<i>Nycticorax nycticorax</i>	3,3	36	0,3	1	
Nightjar, European	<i>Caprimulgus europaeus</i>	8,5	91	1,9	6	
Nightjar, Fiery-necked	<i>Caprimulgus pectoralis</i>	18,0	193	6,8	21	
Nightjar, Square-tailed	<i>Caprimulgus fossii</i>	14,9	160	2,9	9	
Openbill, African	<i>Anastomus lamelligerus</i>	0,2	2	0,3	1	

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Common name	Scientific name	Full protocol		Ad hoc protocol		This assessment
		Rep. rate	No. recs	Rep. rate	No. recs	
Oriole, Black-headed	<i>Oriolus larvatus</i>	3,2	34	0,6	2	
Oriole, Eurasian Golden	<i>Oriolus oriolus</i>	0,1	1	0,0	0	
Osprey, Western	<i>Pandion haliaetus</i>	25,0	269	6,8	21	X
Owl, African Wood	<i>Strix woodfordii</i>	0,6	6	1,0	3	
Owl, Marsh	<i>Asio capensis</i>	0,1	1	0,0	0	
Owl, Western Barn	<i>Tyto alba</i>	0,5	5	0,3	1	
Oystercatcher, Eurasian	<i>Haematopus ostralegus</i>	0,1	1	0,0	0	
Painted-snipe, Greater	<i>Rostratula benghalensis</i>	0,9	10	0,0	0	
Pelican, Great White	<i>Pelecanus onocrotalus</i>	11,7	126	1,3	4	X
Pelican, Pink-backed	<i>Pelecanus rufescens</i>	16,6	178	1,0	3	X
Pigeon, African Green	<i>Treron calvus</i>	11,3	121	2,3	7	
Pigeon, African Olive	<i>Columba arquatrix</i>	0,1	1	0,0	0	
Pigeon, Speckled	<i>Columba guinea</i>	7,8	84	1,3	4	X
Pipit, African	<i>Anthus cinnamomeus</i>	22,0	236	4,5	14	
Pipit, Striped	<i>Anthus lineiventris</i>	0,2	2	0,3	1	
Plover, Common Ringed	<i>Charadrius hiaticula</i>	16,9	182	4,2	13	X
Plover, Greater Sand	<i>Charadrius leschenaultii</i>	4,7	51	1,0	3	X
Plover, Grey	<i>Pluvialis squatarola</i>	38,7	416	13,2	41	X
Plover, Kittlitz's	<i>Charadrius pecuarius</i>	11,9	128	6,5	20	X
Plover, Siberian Sand	<i>Charadrius mongolus</i>	0,3	3	0,3	1	
Plover, Three-banded	<i>Charadrius tricollaris</i>	18,8	202	5,5	17	X
Plover, White-fronted	<i>Charadrius marginatus</i>	51,4	553	16,5	51	X
Pratincole, Collared	<i>Glareola pratincola</i>	1,6	17	0,3	1	
Prinia, Tawny-flanked	<i>Prinia subflava</i>	65,5	704	22,3	69	X
Puffback, Black-backed	<i>Dryoscopus cubla</i>	50,2	540	17,4	54	X
Pygmy Kingfisher, African	<i>Ispidina picta</i>	8,9	96	1,6	5	
Quail, Common	<i>Coturnix coturnix</i>	0,5	5	0,0	0	
Quelea, Red-billed	<i>Quelea quelea</i>	3,8	41	1,0	3	X
Quelea, Red-headed	<i>Quelea erythrops</i>	3,9	42	1,3	4	
Rail, African	<i>Rallus caerulescens</i>	0,7	8	0,0	0	
Red Bishop, Southern	<i>Euplectes orix</i>	27,3	294	5,2	16	X
Robin-Chat, Cape	<i>Cossypha caffra</i>	0,6	6	0,0	0	
Robin-Chat, Chorister	<i>Cossypha dichroa</i>	0,3	3	0,0	0	
Robin-Chat, Red-capped	<i>Cossypha natalensis</i>	74,4	800	30,0	93	X
Roller, Broad-billed	<i>Eurystomus glaucurus</i>	0,3	3	0,0	0	
Roller, European	<i>Coracias garrulus</i>	3,6	39	0,0	0	
Roller, Lilac-breasted	<i>Coracias caudatus</i>	0,1	1	0,6	2	
Ruff	<i>Calidris pugnax</i>	4,3	46	0,3	1	X
Sanderling	<i>Calidris alba</i>	4,6	49	1,0	3	
Sandpiper, Common	<i>Actitis hypoleucos</i>	31,9	343	7,4	23	X
Sandpiper, Curlew	<i>Calidris ferruginea</i>	7,5	81	2,3	7	
Sandpiper, Marsh	<i>Tringa stagnatilis</i>	4,4	47	0,6	2	
Sandpiper, Terek	<i>Xenus cinereus</i>	4,5	48	1,3	4	
Sandpiper, Wood	<i>Tringa glareola</i>	9,8	105	1,0	3	X
Saw-wing, Black	<i>Psilidoprocne pristoptera</i>	34,0	365	8,4	26	X
Scimitarbill, Common	<i>Rhinopomastus cyanomelas</i>	0,0	0	0,3	1	
Scrub Robin, Brown	<i>Cercotrichas signata</i>	0,5	5	0,0	0	
Scrub Robin, White-browed	<i>Cercotrichas leucophrys</i>	55,3	594	15,5	48	X
Shoveler, Cape	<i>Anas smithii</i>	0,7	7	0,3	1	
Shrike, Red-backed	<i>Lanius collurio</i>	7,3	78	0,6	2	
Skua, Subantarctic	<i>Stercorarius antarcticus</i>	0,1	1	0,0	0	
Snake Eagle, Black-chested	<i>Circaetus pectoralis</i>	2,1	23	0,3	1	
Snake Eagle, Brown	<i>Circaetus cinereus</i>	1,6	17	0,0	0	
Snake Eagle, Southern Banded	<i>Circaetus fasciolatus</i>	3,2	34	0,6	2	
Snipe, African	<i>Gallinago nigripennis</i>	0,1	1	0,0	0	
Sparrow, House	<i>Passer domesticus</i>	66,5	715	30,3	94	X
Sparrow, Southern Grey-headed	<i>Passer diffusus</i>	8,7	94	1,3	4	
Sparrow, Yellow-throated Bush	<i>Gymnoris superciliaris</i>	2,0	22	0,0	0	
Sparrowhawk, Black	<i>Accipiter melanoleucus</i>	10,3	111	9,0	28	
Sparrowhawk, Little	<i>Accipiter minullus</i>	1,8	19	1,0	3	
Spoonbill, African	<i>Platalea alba</i>	7,8	84	2,6	8	
Spurfowl, Natal	<i>Pternistis natalensis</i>	1,9	20	0,0	0	X
Spurfowl, Swainson's	<i>Pternistis swainsonii</i>	0,3	3	0,0	0	
Starling, Black-bellied	<i>Notopholia corrusca</i>	68,7	738	27,4	85	X
Starling, Cape	<i>Lamprotornis nitens</i>	5,6	60	0,3	1	
Starling, Common	<i>Sturnus vulgaris</i>	0,9	10	1,0	3	
Starling, Red-winged	<i>Onychognathus morio</i>	10,8	116	3,2	10	X
Starling, Violet-backed	<i>Cinnyricinclus leucogaster</i>	6,6	71	3,5	11	
Starling, Wattled	<i>Creatophora cinerea</i>	0,9	10	0,0	0	

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Common name	Scientific name	Full protocol		Ad hoc protocol		This assessment
		Rep. rate	No. recs	Rep. rate	No. recs	
Stilt, Black-winged	<i>Himantopus himantopus</i>	15,2	163	1,6	5	
Stint, Little	<i>Calidris minuta</i>	7,8	84	1,6	5	X
Stonechat, African	<i>Saxicola torquatus</i>	25,6	275	7,7	24	
Stork, Saddle-billed	<i>Ephippiorhynchus senegalensis</i>	0,6	6	0,3	1	
Stork, White	<i>Ciconia ciconia</i>	0,2	2	0,0	0	
Stork, Woolly-necked	<i>Ciconia episcopus</i>	65,5	704	29,7	92	X
Stork, Yellow-billed	<i>Mycteria ibis</i>	1,2	13	0,0	0	X
Sunbird, Amethyst	<i>Chalcomitra amethystina</i>	6,3	68	0,0	0	
Sunbird, Collared	<i>Hedydipna collaris</i>	32,0	344	11,6	36	
Sunbird, Grey	<i>Cyanomitra veronii</i>	24,4	262	5,5	17	
Sunbird, Olive	<i>Cyanomitra olivacea</i>	58,4	628	22,3	69	X
Sunbird, Purple-banded	<i>Cinnyris bifasciatus</i>	32,7	352	9,0	28	X
Sunbird, Scarlet-chested	<i>Chalcomitra senegalensis</i>	30,7	330	11,0	34	
Sunbird, White-bellied	<i>Cinnyris talatala</i>	8,7	94	0,6	2	
Swallow, Barn	<i>Hirundo rustica</i>	42,1	453	17,4	54	X
Swallow, Greater Striped	<i>Cecropis cucullata</i>	0,3	3	0,6	2	
Swallow, Grey-rumped	<i>Pseudhirundo griseopyga</i>	0,2	2	0,0	0	
Swallow, Lesser Striped	<i>Cecropis abyssinica</i>	55,5	597	20,3	63	X
Swallow, Red-breasted	<i>Cecropis semirufa</i>	6,9	74	1,6	5	
Swallow, White-throated	<i>Hirundo albigularis</i>	24,7	265	3,9	12	X
Swallow, Wire-tailed	<i>Hirundo smithii</i>	37,3	401	18,4	57	X
Swampphen, African	<i>Porphyrio madagascariensis</i>	24,8	267	5,2	16	
Swift, African Black	<i>Apus barbatus</i>	0,8	9	0,0	0	X
Swift, African Palm	<i>Cypsiurus parvus</i>	73,5	790	31,3	97	X
Swift, Alpine	<i>Tachymarptis melba</i>	0,2	2	0,3	1	
Swift, Little	<i>Apus affinis</i>	46,7	502	16,8	52	X
Swift, White-rumped	<i>Apus caffer</i>	21,5	231	7,1	22	X
Tchagra, Black-crowned	<i>Tchagra senegalus</i>	5,3	57	0,3	1	
Teal, Blue-billed	<i>Anas hottentota</i>	18,0	194	1,0	3	X
Teal, Cape	<i>Anas capensis</i>	2,2	24	0,0	0	
Teal, Red-billed	<i>Anas erythrorhyncha</i>	9,7	104	1,6	5	X
Tern, Black	<i>Chlidonias niger</i>	0,1	1	0,0	0	
Tern, Caspian	<i>Hydroprogne caspia</i>	45,2	486	14,2	44	X
Tern, Common	<i>Sterna hirundo</i>	29,3	315	9,7	30	
Tern, Greater Crested	<i>Thalasseus bergii</i>	43,9	472	17,1	53	X
Tern, Lesser Crested	<i>Thalasseus bengalensis</i>	18,3	197	7,7	24	X
Tern, Little	<i>Sternula albifrons</i>	13,5	145	6,8	21	X
Tern, Sandwich	<i>Thalasseus sandwicensis</i>	23,5	253	7,1	22	X
Tern, Whiskered	<i>Chlidonias hybrida</i>	11,0	118	2,9	9	
Tern, White-winged	<i>Chlidonias leucopterus</i>	5,9	63	0,6	2	
Thick-knee, Spotted	<i>Burhinus capensis</i>	0,2	2	0,0	0	
Thick-knee, Water	<i>Burhinus vermiculatus</i>	29,7	319	4,8	15	X
Thrush, Groundscraper	<i>Turdus litsitsirupa</i>	1,5	16	0,3	1	
Thrush, Kurrichane	<i>Turdus libonyana</i>	1,1	12	0,3	1	
Tinkerbird, Red-fronted	<i>Pogoniulus pusillus</i>	5,5	59	1,0	3	
Tinkerbird, Yellow-rumped	<i>Pogoniulus bilineatus</i>	74,6	802	36,1	112	X
Tit, Southern Black	<i>Melaniparus niger</i>	0,3	3	0,3	1	
Tit-Flycatcher, Grey	<i>Myioparus plumbeus</i>	1,1	12	0,0	0	
Trogon, Narina	<i>Apaloderma narina</i>	3,0	32	0,6	2	
Turaco, Livingstone's	<i>Tauraco livingstonii</i>	21,8	234	12,6	39	
Turaco, Purple-crested	<i>Gallirex porphyreolophus</i>	66,6	716	28,7	89	X
Turnstone, Ruddy	<i>Arenaria interpres</i>	3,7	40	1,9	6	
Twinspot, Green	<i>Mandingoa nitidula</i>	1,3	14	0,6	2	
Vulture, Palm-nut	<i>Gypohierax angolensis</i>	12,5	134	3,9	12	X
Wagtail, African Pied	<i>Motacilla aguimp</i>	76,0	817	31,0	96	X
Wagtail, Cape	<i>Motacilla capensis</i>	32,8	353	8,4	26	X
Wagtail, Mountain	<i>Motacilla clara</i>	0,4	4	0,0	0	
Wagtail, Western Yellow	<i>Motacilla flava</i>	1,5	16	0,6	2	
Warbler, African Reed	<i>Acrocephalus baeticatus</i>	5,7	61	0,3	1	
Warbler, Garden	<i>Curruca borin</i>	0,9	10	0,3	1	
Warbler, Great Reed	<i>Acrocephalus arundinaceus</i>	5,6	60	0,6	2	
Warbler, Lesser Swamp	<i>Acrocephalus gracilirostris</i>	48,8	525	15,2	47	X
Warbler, Little Rush	<i>Bradypterus baboecala</i>	14,7	158	1,6	5	
Warbler, Marsh	<i>Acrocephalus palustris</i>	0,8	9	0,0	0	
Warbler, Sedge	<i>Acrocephalus schoenobaenus</i>	0,0	0	0,3	1	
Warbler, Willow	<i>Phylloscopus trochilus</i>	5,1	55	1,0	3	X
Wattle-eye, Black-throated	<i>Platysteira peltata</i>	7,6	82	2,9	9	
Waxbill, Blue	<i>Uraeginthus angolensis</i>	0,5	5	0,0	0	
Waxbill, Common	<i>Estrilda astrild</i>	37,5	403	9,0	28	X

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Common name	Scientific name	Full protocol		Ad hoc protocol		This assessment
		Rep. rate	No. recs	Rep. rate	No. recs	
Waxbill, Grey	<i>Glaucostrelda perreini</i>	1,2	13	0,3	1	
Waxbill, Orange-breasted	<i>Amandava subflava</i>	0,8	9	0,0	0	
Weaver, Cape	<i>Ploceus capensis</i>	0,3	3	0,3	1	
Weaver, Dark-backed	<i>Ploceus bicolor</i>	17,0	183	7,7	24	
Weaver, Eastern Golden	<i>Ploceus subaureus</i>	54,7	588	16,1	50	X
Weaver, Holub's Golden	<i>Ploceus xanthops</i>	0,3	3	0,0	0	
Weaver, Lesser Masked	<i>Ploceus intermedius</i>	22,4	241	6,1	19	
Weaver, Southern Brown-throated	<i>Ploceus xanthopterus</i>	12,8	138	1,9	6	X
Weaver, Southern Masked	<i>Ploceus velatus</i>	5,8	62	1,3	4	
Weaver, Spectacled	<i>Ploceus ocularis</i>	48,0	516	13,5	42	X
Weaver, Thick-billed	<i>Amblyospiza albifrons</i>	56,1	603	17,1	53	X
Weaver, Village	<i>Ploceus cucullatus</i>	54,5	586	11,6	36	X
Whimbrel, Eurasian	<i>Numenius phaeopus</i>	61,6	662	18,4	57	X
White-eye, Cape	<i>Zosterops virens</i>	72,3	777	27,1	84	X
Whydah, Pin-tailed	<i>Vidua macroura</i>	22,1	238	4,5	14	X
Widowbird, Fan-tailed	<i>Euplectes axillaris</i>	29,4	316	5,8	18	X
Widowbird, Red-collared	<i>Euplectes ardens</i>	0,4	4	0,0	0	
Widowbird, White-winged	<i>Euplectes albonotatus</i>	0,1	1	0,0	0	
Wood Hoopoe, Green	<i>Phoeniculus purpureus</i>	0,1	1	0,0	0	
Wood-Dove, Emerald-spotted	<i>Turtur chalcospilos</i>	13,1	141	4,5	14	
Woodpecker, Cardinal	<i>Dendropicos fuscescens</i>	3,0	32	0,3	1	
Woodpecker, Golden-tailed	<i>Campethera abingoni</i>	29,9	321	11,0	34	
Woodpecker, Olive	<i>Dendropicos griseocephalus</i>	0,3	3	0,0	0	
Yellow Warbler, African	<i>Iduna natalensis</i>	13,0	140	1,3	4	

Appendix 2. Details of all waterbirds counted during all six of the sources of waterbird-count information from the Berth 605 Project Areas of Influence (PAOI, i.e. Richards Bay harbour). Also identified the relevant thresholds qualifying sites for regional and global Important Bird and Biodiversity Area (IBA) status and Ramsar status where these are available.

Source Date	No. of counts	Common name	Scientific name	Begg 1978 1976-1977	Ryan et al 1986 1980-1981	CWAC 1993-2012		Allan & McInnes 2002 2001		Allan 2009 2008	Anchor Environmental Consultants & The Biodiversity Company (2023) 2022-2023		IBA	Sub-reg. IBA	Ramsar
				9	1	Mean	Max	Mean	Max	1	Mean	Max	14		
African Darter			<i>Anhinga rufa</i>	7	1	9,6	45	0,0	0	0	0,0	0	500	250	
African Fish-Eagle			<i>Haliaeetus vocifer</i>	2	3	4,5	9	6,7	8	2	3,9	8			
African Jacana			<i>Actophilornis africanus</i>	0	0	11,9	30	0,0	0	0	0,0	0			
African Marsh Harrier			<i>Circus ranivorus</i>	2	1	1,6	6	0,0	0	0	0,0	0			
African Openbill			<i>Anastomus lamelligerus</i>	0	0	12,0	12	0,0	0	0	0,0	0	1000	500	
African Pied Wagtail			<i>Motacilla aguimp</i>	0	0	3,0	8	6,3	9	0	0,0	0			
African Purple Swamphen			<i>Porphyrio madagascariensis</i>	0	0	8,3	30	0,0	0	0	0,0	0	100	50	
African Pygmy-Goose			<i>Nettapus auritus</i>	0	0	9,3	26	0,0	0	0	0,0	0			
African Rail			<i>Rallus caerulescens</i>	0	0	2,0	2	0,0	0	0	0,0	0			
African Sacred Ibis			<i>Threskiornis aethiopicus</i>	40	1	10,6	43	0,0	0	0	0,0	0	2000	1000	3000
African Snipe			<i>Gallinago nigripennis</i>	1	0	0,0	0	0,0	0	0	0,0	0			
African Spoonbill			<i>Platalea alba</i>	110	11	13,4	61	0,0	0	0	0,0	0	150	75	1000
American Purple Gallinule			<i>Porphyrio martinica</i>	0	0	2,0	2	0,0	0	0	0,0	0			
Bar-tailed Godwit			<i>Limosa lapponica</i>	1	54	3,6	10	2,0	6	1	0,9	5			
Black Crake			<i>Amaurornis flavirostris</i>	0	0	5,4	16	0,0	0	0	0,0	0			
Black Tern			<i>Chlidonias niger</i>	0	0	0,0	0	0,0	0	1	0,0	0			
Black-headed Heron			<i>Ardea melanocephala</i>	9	2	2,6	7	0,0	0	0	0,1	1			
Blacksmith Lapwing			<i>Vanellus armatus</i>	4	2	3,7	8	1,0	3	0	0,9	4			
Black-winged Stilt			<i>Himantopus himantopus</i>	16	0	12,0	29	0,0	0	0	0,0	0	1000	500	1400
Blue-billed Teal			<i>Anas hottentota</i>	100	0	29,6	110	0,0	0	0	0,0	0			1000
Broad-billed Sandpiper			<i>Limicola falcinellus</i>	2	0	2,5	3	0,0	0	0	0,0	0			
Brown-throated Martin			<i>Riparia paludicola</i>	0	0	1,0	1	54,7	155	0	0,0	0			
Cape Cormorant			<i>Phalacrocorax capensis</i>	120	0	4,5	7	0,0	0	0	0,5	5	5500	2750	3000
Cape Gannet			<i>Morus capensis</i>	3	0	0,0	0	0,0	0	0	0,0	0			
Cape Shoveler			<i>Anas smithii</i>	2	0	2,2	6	0,0	0	0	0,0	0	350	175	350
Cape Teal			<i>Anas capensis</i>	3	2	5,2	11	0,0	0	0	0,0	0		1750	1600
Cape Wagtail			<i>Motacilla capensis</i>	0	0	6,4	23	2,7	8	0	0,0	0			
Caspian Tern			<i>Hydroprogne caspia</i>	80	23	21,3	51	21,7	27	2	10,7	46	135	68	20
Chestnut-banded Plover			<i>Charadrius pallidus</i>	0	0	7,0	7	4,7	14	0	0,0	0	400	200	130
Collared Pratincole			<i>Glareola pratincola</i>	35	8	9,7	13	1,0	3	0	0,0	0		500	
Common Greenshank			<i>Tringa nebularia</i>	50	18	14,6	118	6,3	17	4	0,4	2		1150	
Common Moorhen			<i>Gallinula chloropus</i>	0	0	15,2	42	0,0	0	0	0,0	0			
Common Redshank			<i>Tringa totanus</i>	0	0	1,0	1	0,0	0	0	0,0	0			
Common Ringed Plover			<i>Charadrius hiaticula</i>	10000	1092	77,2	357	0,0	0	8	0,1	1		1500	1900
Common Sandpiper			<i>Actitis hypoleucos</i>	0	25	5,5	11	16,0	25	3	2,1	6			
Common Tern			<i>Sterna hirundo</i>	2000	208	1130,2	13000	4,3	12	39	11,6	74	8000	4000	1800

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Source Date No. of counts Common name	Scientific name	Begg 1978 1976-1977	Ryan et al 1986 1980-1981	CWAC 1993-2012		Allan & McInnes 2002 2001		Allan 2009 2008	Anchor Environmental Consultants & The Biodiversity Company (2023) 2022-2023		IBA	Sub-reg. IBA	Ramsar
		9	1	25		3		1	14				
				Mean	Max	Mean	Max		Mean	Max			
Common Whimbrel	<i>Numenius phaeopus</i>	100	165	109,5	356	59,3	90	115	71,2	150			
Crab Plover	<i>Dromas ardeola</i>	0	4	1,1	2	0,0	0	0	0,0	0			
Curlew Sandpiper	<i>Calidris ferruginea</i>	10000	3180	186,2	717	136,7	312	406	0,5	3	7500	3750	
Egyptian Goose	<i>Alopochen aegyptiaca</i>	25	0	4,8	12	1,3	2	0	4,9	12	3500	1750	3200
Eurasian Curlew	<i>Numenius arquata</i>	0	7	5,9	15	0,3	1	2	0,1	1			1000
Giant Kingfisher	<i>Megaceryle maximus</i>	0	1	2,2	6	2,3	3	0	0,1	1			
Glossy Ibis	<i>Plegadis falcinellus</i>	1	0	4,8	16	0,0	0	0	0,0	0	1000	500	
Goliath Heron	<i>Ardea goliath</i>	3	6	2,9	6	1,7	3	2	0,1	1		125	
Great Egret	<i>Ardea alba</i>	25	1	4,4	18	0,0	0	0	0,2	3	500	250	
Great White Pelican	<i>Pelecanus onocrotalus</i>	0	46	42,3	140	0,0	0	2	0,4	6	1800	900	300
Greater Flamingo	<i>Phoenicopterus ruber</i>	0	9	39,8	97	0,0	0	0	0,0	0	1250	625	750
Greater Sand Plover	<i>Anarhynchus leschenaultii</i>	50	137	20,3	65	0,0	0	105	0,9	12	650	325	350
Green-backed Heron	<i>Butorides striata</i>	0	0	2,7	6	0,0	0	0	0,0	0			
Grey Crowned Crane	<i>Balearica regulorum</i>	0	0	2,2	4	0,0	0	0	0,0	0			80
Grey Heron	<i>Ardea cinerea</i>	35	5	12,0	40	5,7	8	2	1,0	3			
Grey Plover	<i>Pluvialis squatarola</i>	50	103	109,1	278	54,3	133	240	33,7	68	1700	850	900
Grey-headed Gull	<i>Chroicocephalus cirrocephalus</i>	2000	115	91,7	210	167,3	190	28	42,1	165	1000	500	3000
Hadedda Ibis	<i>Bostrychia hagedash</i>	0	0	8,1	43	0,0	0	0	0,0	0		500	
Hamerkop	<i>Scopus umbretta</i>	1	0	1,7	4	0,7	1	0	0,0	0			
Kelp Gull	<i>Larus dominicanus</i>	60	3	9,8	24	2,7	6	0	2,5	12	300	150	700
Kittlitz's Plover	<i>Charadrius pecuarius</i>	100	3	5,4	12	0,0	0	1	0,0	0		500	
Knob-billed Duck	<i>Sarkidiornis melanotos</i>	0	0	4,0	4	0,0	0	0	0,0	0			
Lesser Black-backed Gull	<i>Larus fuscus</i>	0	0	3,0	3	0,0	0	0	0,0	0			
Lesser Crested Tern	<i>Thalasseus bengalensis</i>	12	25	31,1	80	0,3	1	2	13,3	107	250	125	440
Lesser Flamingo	<i>Phoenicopterus minor</i>	0	209	1,0	1	0,0	0	0	0,0	0	20000	10000	600
Lesser Jacana	<i>Microparra capensis</i>	0	0	1,2	2	0,0	0	0	0,0	0			
Little Egret	<i>Egretta garzetta</i>	150	19	15,0	64	9,7	18	12	3,9	10	1000	500	
Little Grebe	<i>Tachybaptus ruficollis</i>	0	0	18,7	82	0,0	0	0	0,0	0	500	250	
Little Stint	<i>Calidris minuta</i>	10000	3294	224,0	677	0,0	0	23	0,0	0		5000	
Little Tern	<i>Sternula albifrons</i>	2000	225	216,9	700	0,0	0	6	4,1	32	1000	500	490
Malachite Kingfisher	<i>Corythornis cristatus</i>	0	0	3,6	13	6,0	8	0	0,3	3			
Mangrove Kingfisher	<i>Halcyon senegaloides</i>	0	0	2,0	3	0,0	0	0	0,0	0			
Marsh Sandpiper	<i>Tringa stagnatilis</i>	50	5	10,0	33	0,0	0	4	0,0	0	550	275	710
Osprey	<i>Pandion haliaetus</i>	1	0	3,0	6	1,0	2	2	3,5	6			
Pied Avocet	<i>Recurvirostra avosetta</i>	375	200	0,0	0	0,0	0	0	0,0	0	250	125	190
Pied Kingfisher	<i>Ceryle rudis</i>	8	6	7,4	29	5,3	9	0	1,6	5			
Pink-backed Pelican	<i>Pelecanus rufescens</i>	0	17	9,1	35	0,7	2	2	2,5	12		500	750
Purple Heron	<i>Ardea purpurea</i>	4	1	5,5	29	0,0	0	0	0,0	0	500	250	
Red Knot	<i>Calidris canutus</i>	0	21	7,1	27	0,0	0	2	0,0	0	5000	2500	4000
Red-billed Teal	<i>Anas erythrorhyncha</i>	150	0	42,0	228	0,0	0	0	0,0	0			
Red-chested Flufftail	<i>Sarothrura rufa</i>	0	0	1,0	1	0,0	0	0	0,0	0			

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Source Date No. of counts Common name	Scientific name	Begg 1978 1976-1977	Ryan et al 1986 1980-1981	CWAC 1993-2012		Allan & McInnes 2002 2001		Allan 2009 2008	Anchor Environmental Consultants & The Biodiversity Company (2023) 2022-2023		IBA	Sub-reg. IBA	Ramsar
		9	1	25		3		1	14				
				Mean	Max	Mean	Max		Mean	Max			
Red-knobbed Coot	<i>Fulica cristata</i>	0	0	10,9	32	0,0	0	0	0,0	0	5000	2500	10000
Reed Cormorant	<i>Microcarbo africanus</i>	30	0	47,0	342	0,0	0	0	0,5	4			
Ruddy Turnstone	<i>Arenaria interpres</i>	50	5	2,6	8	0,0	0	0	0,2	2	350	175	1000
Ruff	<i>Calidris pugnax</i>	1000	24	22,6	64	0,0	0	34	0,1	1		10000	
Saddle-billed Stork	<i>Ephippiorhynchus senegalensis</i>	0	1	0,0	0	0,0	0	0	0,0	0			
Sanderling	<i>Calidris alba</i>	6	13	40,7	195	4,0	8	9	2,1	25	2200	1100	1200
Sandwich Tern	<i>Thalasseus sandvicensis</i>	30	98	45,3	141	9,0	27	1	2,8	17	1500	750	1700
Southern Pochard	<i>Netta erythrophthalma</i>	0	0	12,0	30	0,0	0	0	0,0	0			
Spur-winged Goose	<i>Plectropterus gambensis</i>	50	9	4,9	14	0,0	0	0	0,0	0		1875	710
Squacco Heron	<i>Ardeola ralloides</i>	1	0	2,7	4	0,0	0	0	0,0	0		250	
Subantarctic Skua	<i>Stercorarius antarcticus</i>	0	0	1,0	1	0,0	0	0	0,0	0			
Swift Tern	<i>Sterna bergii</i>	25	10	26,7	115	18,3	36	27	29,8	151	500	250	200
Terek Sandpiper	<i>Xenus cinereus</i>	500	76	123,8	410	9,0	23	170	0,8	6			
Three-banded Plover	<i>Charadrius tricollaris</i>	3	2	2,8	6	0,3	1	2	0,0	0			
Tibetan Sand Plover	<i>Anarhynchus atrifrons</i>	1	0	1,0	1	0,0	0	0	0,0	0	250	125	1250
Water Thick-knee	<i>Burhinus vermiculatus</i>	2	0	4,3	8	3,3	5	0	0,2	2			
Western Cattle Egret	<i>Bubulcus ibis</i>	0	0	12,8	54	0,0	0	0	0,0	0		5000	
Whiskered Tern	<i>Chlidonias hybrida</i>	7	0	52,8	200	0,0	0	0	0,0	0	150	75	85
White-backed Duck	<i>Thalassornis leuconotus</i>	0	0	10,7	40	0,0	0	0	0,0	0	220	110	250
White-breasted Cormorant	<i>Phalacrocorax lucidus</i>	200	0	13,8	40	0,7	1	0	0,4	3	5000	2500	130
White-faced Duck	<i>Dendrocygna viduata</i>	30	10	35,5	157	0,0	0	0	0,0	0			
White-fronted Plover	<i>Charadrius marginatus</i>	100	116	46,0	221	33,3	70	23	9,5	21	250	125	180
White-throated Swallow	<i>Hirundo albigularis</i>	0	0	0,0	0	0,3	1	0	0,0	0			
White-winged Tern	<i>Chlidonias leucopterus</i>	2000	93	28,9	50	0,0	0	69	0,1	1	2000	1000	
Wood Sandpiper	<i>Tringa glareola</i>	50	1	13,4	57	0,0	0	17	0,0	0			
Woolly-necked Stork	<i>Ciconia episcopus</i>	3	1	37,4	183	3,3	6	6	4,6	19			
Yellow-billed Duck	<i>Anas undulata</i>	250	3	65,2	326	0,0	0	0	0,1	2	1700	850	1000
Yellow-billed Egret	<i>Egretta intermedia</i>	0	0	1,6	3	0,0	0	0	0,0	0			
Yellow-billed Stork	<i>Mycteria ibis</i>	13	0	5,1	15	0,7	2	0	0,0	0	500	250	870
Unidentified terns		0	0	34,0	34	0,0	0	0	0,0	0			
Unidentified waders		0	0	225,0	400	0,0	0	0	0,0	0			

Appendix 3. The 108 bird species recorded during the field surveys for this assessment, along with their Red Data status where relevant (Reg. = regional, Glo. = global): EN = Endangered, VU = Vulnerable, NT = Near-threatened, LC = Least concern).

Common name	Scientific name	Red Data Reg./Glo.	29 Nov. 2024	3 Dec. 2024	22 Jan. 2025	30 Jan. 2025	Total
Apalis, Rudd's	<i>Apalis ruddi</i>		X				X
Apalis, Yellow-breasted	<i>Apalis flava</i>		X				X
Barbet, Black-collared	<i>Lybius torquatus</i>					X	X
Barbet, White-eared	<i>Stactolaema leucotis</i>		X			X	X
Bee-eater, Blue-cheeked	<i>Merops persicus</i>		X		X	X	X
Bee-eater, Little	<i>Merops pusillus</i>					X	X
Boubou, Southern	<i>Laniarius ferrugineus</i>					X	X
Bulbul, Dark-capped	<i>Pycnonotus tricolor</i>		X			X	X
Buzzard, Common	<i>Buteo buteo</i>			X			X
Buzzard, European Honey	<i>Pernis apivorus</i>					X	X
Camaropectera, Green-backed	<i>Camaropectera brachyura</i>		X			X	X
Canary, Brimstone	<i>Crithagra sulphurata</i>		X			X	X
Canary, Yellow-fronted	<i>Crithagra mozambica</i>		X		X	X	X
Cisticola, Rattling	<i>Cisticola chiniana</i>		X			X	X
Cisticola, Rufous-winged	<i>Cisticola galactotes</i>		X				X
Coucal, Burchell's	<i>Centropus burchellii</i>					X	X
Crow, Pied	<i>Corvus albus</i>		X			X	X
Cuckoo, Diederik	<i>Chrysococcyx caprius</i>		X				X
Dove, Red-eyed	<i>Streptopelia semitorquata</i>		X		X		X
Dove, Rock	<i>Columba livia</i>				X		X
Dove, Tambourine	<i>Turtur tympanistria</i>		X			X	X
Duck, White-faced Whistling	<i>Dendrocygna viduata</i>					X	X
Duck, Yellow-billed	<i>Anas undulata</i>		X			X	X
Egret, Little	<i>Egretta garzetta</i>		X			X	X
Fiscal, Southern	<i>Lanius collaris</i>		X				X
Fish Eagle, African	<i>Haliaeetus vocifer</i>		X	X	X		X
Godwit, Bar-tailed	<i>Limosa lapponica</i>	LC/NT			X		X
Goose, Egyptian	<i>Alopochen aegyptiaca</i>		X	X			X
Goose, Spur-winged	<i>Plectropterus gambensis</i>		X				X
Greenbul, Sombre	<i>Andropadus importunus</i>		X		X	X	X
Greenbul, Yellow-bellied	<i>Chlorocichla flaviventris</i>		X			X	X
Greenshank, Common	<i>Tringa nebularia</i>				X		X
Gull, Grey-headed	<i>Chroicocephalus cirrocephalus</i>			X	X		X
Heron, Goliath	<i>Ardea goliath</i>		X				X
Heron, Grey	<i>Ardea cinerea</i>			X		X	X
Ibis, Hadada	<i>Bostrychia hagedash</i>			X	X	X	X
Jacana, African	<i>Actophilornis africanus</i>		X				X
Kingfisher, Giant	<i>Megaceryle maxima</i>					X	X
Kingfisher, Malachite	<i>Corythornis cristatus</i>			X			X
Kingfisher, Pied	<i>Ceryle rudis</i>		X				X
Kite, Yellow-billed	<i>Milvus aegyptius</i>		X		X	X	X
Longclaw, Yellow-throated	<i>Macronyx croceus</i>		X				X
Martin, Rock	<i>Ptyonoprogne fuligula</i>		X				X
Moorhen, Common	<i>Gallinula chloropus</i>		X				X
Mousebird, Speckled	<i>Colius striatus</i>					X	X
Myna, Common	<i>Acridotheres tristis</i>		X		X	X	X
Osprey, Western	<i>Pandion haliaetus</i>			X	X		X
Pelican, Great White	<i>Pelecanus onocrotalus</i>	VU/LC		X		X	X
Pelican, Pink-backed	<i>Pelecanus rufescens</i>	VU/LC	X	X		X	X
Pigeon, Speckled	<i>Columba guinea</i>		X				X
Plover, Common Ringed	<i>Charadrius hiaticula</i>		X				X
Plover, Greater Sand	<i>Charadrius leschenaultii</i>				X		X
Plover, Grey	<i>Pluvialis squatarola</i>	LC/VU		X	X		X
Plover, Kittlitz's	<i>Charadrius pecuarius</i>		X				X
Plover, Three-banded	<i>Charadrius tricollaris</i>		X				X
Plover, White-fronted	<i>Charadrius marginatus</i>			X	X		X
Prinia, Tawny-flanked	<i>Prinia subflava</i>		X			X	X
Puffback, Black-backed	<i>Dryoscopus cubla</i>					X	X
Quelea, Red-billed	<i>Quelea quelea</i>					X	X
Red Bishop, Southern	<i>Euplectes orix</i>		X			X	X
Robin-Chat, Red-capped	<i>Cossypha natalensis</i>					X	X
Ruff	<i>Calidris pugnax</i>		X				X
Sandpiper, Common	<i>Actitis hypoleucos</i>			X			X
Sandpiper, Wood	<i>Tringa glareola</i>		X				X
Saw-wing, Black	<i>Psaliptoprocne pristoptera</i>					X	X

BERTH 605 – SPECIALIST AVIFAUNAL IMPACT ASSESSMENT

Common name	Scientific name	Red Data Reg./Glo.	29 Nov. 2024	3 Dec. 2024	22 Jan. 2025	30 Jan. 2025	Total
Scrub Robin, White-browed	<i>Cercotrichas leucophrys</i>			X			X
Sparrow, House	<i>Passer domesticus</i>		X		X		X
Spurfowl, Natal	<i>Pternistis natalensis</i>				X		X
Starling, Black-bellied	<i>Notopholia corrusca</i>		X			X	X
Starling, Red-winged	<i>Onychognathus morio</i>		X		X	X	X
Stint, Little	<i>Calidris minuta</i>		X				X
Stork, Woolly-necked	<i>Ciconia episcopus</i>		X	X	X	X	X
Stork, Yellow-billed	<i>Mycteria ibis</i>	EN/LC	X				X
Sunbird, Olive	<i>Cyanomitra olivacea</i>					X	X
Sunbird, Purple-banded	<i>Cinnyris bifasciatus</i>		X			X	X
Swallow, Barn	<i>Hirundo rustica</i>		X		X		X
Swallow, Lesser Striped	<i>Cecropis abyssinica</i>		X		X	X	X
Swallow, White-throated	<i>Hirundo albicularis</i>		X		X		X
Swallow, Wire-tailed	<i>Hirundo smithii</i>				X		X
Swift, African Black	<i>Apus barbatus</i>			X			X
Swift, African Palm	<i>Cypsiurus parvus</i>		X		X	X	X
Swift, Little	<i>Apus affinis</i>		X		X	X	X
Swift, White-rumped	<i>Apus caffer</i>					X	X
Teal, Blue-billed	<i>Anas hottentota</i>		X				X
Teal, Red-billed	<i>Anas erythrorhyncha</i>		X				X
Tern, Caspian	<i>Hydroprogne caspia</i>	VU/LC	X	X	X	X	X
Tern, Greater Crested	<i>Thalasseus bergii</i>				X		X
Tern, Lesser Crested	<i>Thalasseus bengalensis</i>				X		X
Tern, Little	<i>Sternula albifrons</i>				X		X
Tern, Sandwich	<i>Thalasseus sandvicensis</i>				X		X
Thick-knee, Water	<i>Burhinus vermiculatus</i>			X	X		X
Tinkerbird, Yellow-rumped	<i>Pogoniulus bilineatus</i>		X			X	X
Turaco, Purple-crested	<i>Gallirex porphyreolophus</i>		X				X
Vulture, Palm-nut	<i>Gypohierax angolensis</i>			X			X
Wagtail, African Pied	<i>Motacilla aguimp</i>			X	X	X	X
Wagtail, Cape	<i>Motacilla capensis</i>		X				X
Warbler, Lesser Swamp	<i>Acrocephalus gracilirostris</i>		X				X
Warbler, Willow	<i>Phylloscopus trochilus</i>					X	X
Waxbill, Common	<i>Estrilda astrild</i>					X	X
Weaver, Eastern Golden	<i>Ploceus subaureus</i>		X			X	X
Weaver, Southern Brown-throated	<i>Ploceus xanthopterus</i>		X				X
Weaver, Spectacled	<i>Ploceus ocularis</i>					X	X
Weaver, Thick-billed	<i>Amblyospiza albifrons</i>		X			X	X
Weaver, Village	<i>Ploceus cucullatus</i>		X		X	X	X
Whimbrel, Eurasian	<i>Numenius phaeopus</i>			X	X		X
White-eye, Cape	<i>Zosterops virens</i>		X			X	X
Whydah, Pin-tailed	<i>Vidua macroura</i>		X				X
Widowbird, Fan-tailed	<i>Euplectes axillaris</i>					X	X

Appendix 4. Results of the waterbird count on 3 Dec. 2024 along the shoreline of the Berth 605 project area and looking out across to the Sand-spit Island and Kabeljou Flats.

Area	Species	Date	Time	Latitude	Longitude	No.birds
Berth 605 area	African Fish Eagle	2024/12/03	09:23:29	-28.796675	32.031708	2
Berth 605 area	Common Sandpiper	2024/12/03	08:27:34	-28.791862	32.028156	1
Berth 605 area	Common Sandpiper	2024/12/03	08:31:10	-28.791883	32.028145	1
Berth 605 area	Common Sandpiper	2024/12/03	08:45:50	-28.791485	32.028011	2
Berth 605 area	Common Sandpiper	2024/12/03	09:12:30	-28.794811	32.028126	1
Berth 605 area	Common Sandpiper	2024/12/03	09:17:23	-28.795637	32.029785	1
Berth 605 area	Common Sandpiper	2024/12/03	09:22:03	-28.796776	32.031750	3
Berth 605 area	Common Sandpiper	2024/12/03	10:16:14	-28.797626	32.030338	1
Berth 605 area	Eurasian Whimbrel	2024/12/03	08:27:09	-28.791862	32.028156	1
Berth 605 area	Eurasian Whimbrel	2024/12/03	08:33:56	-28.791801	32.028236	1
Berth 605 area	Eurasian Whimbrel	2024/12/03	09:22:19	-28.796694	32.031712	1
Berth 605 area	Eurasian Whimbrel	2024/12/03	09:44:58	-28.797323	32.031368	2
Berth 605 area	Hadada Ibis	2024/12/03	08:52:50	-28.791626	32.026474	1
Berth 605 area	Malachite Kingfisher	2024/12/03	08:56:27	-28.792459	32.025829	1
Berth 605 area	Water Thick-knee	2024/12/03	08:49:01	-28.791275	32.027252	2
Berth 605 area	Western Osprey	2024/12/03	10:20:51	-28.797215	32.029579	1
Berth 605 area	White-fronted Plover	2024/12/03	08:52:31	-28.791626	32.026474	1
Sandspit Island	African Fish Eagle	2024/12/03	10:00:52	-28.797468	32.031456	1
Sandspit Island	Caspian Tern	2024/12/03	09:49:48	-28.797430	32.031429	14
Sandspit Island	Common Sandpiper	2024/12/03	09:43:29	-28.797369	32.031380	5
Sandspit Island	Egyptian Goose	2024/12/03	09:41:28	-28.797218	32.031368	1
Sandspit Island	Eurasian Whimbrel	2024/12/03	09:38:33	-28.797310	32.031376	20
Sandspit Island	Grey Heron	2024/12/03	09:42:23	-28.797415	32.031399	1
Sandspit Island	Grey Plover	2024/12/03	09:37:25	-28.797403	32.031376	20
Sandspit Island	Grey-headed Gull	2024/12/03	09:47:53	-28.797491	32.031425	1
Sandspit Island	Western Osprey	2024/12/03	09:39:38	-28.797310	32.031376	1
Kabeljou Flats	Caspian Tern	2024/12/03	09:40:52	-28.797310	32.031376	1
Kabeljou Flats	Western Osprey	2024/12/03	09:40:09	-28.797310	32.031376	1
Flying over	Great White Pelican	2024/12/03	09:04:10	-28.792883	32.027195	5
Flying over	Palm-nut Vulture	2024/12/03	09:59:08	-28.797558	32.031479	2
Flying over	Woolly-necked Stork	2024/12/03	09:05:41	-28.792912	32.027241	3
Flying over	Woolly-necked Stork	2024/12/03	10:21:20	-28.797295	32.029503	1