ARUP

DCT Gdańsk Sp. z o. o.

Gdansk Port | DTC Terminal 3 (T3) | Poland

Appendix B - Ornithology Mitigation Review

Reference:

| 11 July 2022

Job number 286493-00

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1. Potential Biodiversity Effects and Risks

This report provides further consideration to sensitive ornithological receptors identified through the Critical Habitats Assessment (CHA- Arup, 2022) and should be read in conjunction with the CHA. The purpose of this report is to review the potential risks following availability of additional construction details and to propose appropriate and proportionate mitigation measures.

Potential sources of adverse impact associated with the construction, operation, and decommissioning phases of the DCT T3 Gdansk Port project are identified in the Environmental Impact Assessment[1]. Of note to this mitigation review, is the Environmental Decision requirement that prohibits certain disturbing activities throughout the bird nesting season on Plaza Stogi; i.e. cessation of such works between April and August inclusive.

Following the Gap Analysis Report (Arup, 2022), it was identified that a review of the mitigation requirements was necessary for certain bird species.

Therefore, potential biodiversity impacts and risks for species that have been identified as priority biodiversity features (PBF) or those that trigger Critical Habitat (CH) within the CHA is provided below.

Species assessments are provided for the following groups:

- Tern Species (including little tern *Sternula albifrons* (CH), common tern *Sterna hirundo* (CH) and sandwich tern *Thalasseus sandvicensi* (CH).
- Bird Assemblage within Zatoka Pucka SPA (including little ringed plover (*Charadrius dubius*) and common ringed plover (*Charadrius hiaticula*) long-tailed duck *Clangula hyemalis* (PBF) and horned grebe *Podiceps auratus* (PBF).

This report reviews the potential effects to key sensitive receptors identified in the CHA in lieu of recently available construction details and provides recommendations for appropriate and proportionate mitigation measures. This report considers Ornithology, refer to Appendix A - Marine Mammal Mitigation Review (Arup, 2022) for impacts and mitigation measures regarding marine mammals. Relevant plans identifying the Ecologically Appropriate Area of Analysis (EAAA) and location of Natura 2000 Sites for context are provided in the Critical Habitats Assessment (CHA) – Figure 2.

[1] Andrzejewski T., Bednarska M., Behnke M., Bzoma Sz., Chmara R., Kiejzik-Glowinska M., Matczak M., Oldakowski B., Pawelec Z., Rachwalska K., Staszek W., Szymanski J., Tyszecki A., Ziecik P. 2018. EIA Report for Expansion of the DCT Gdansk container terminal in the Northern Port in Gdansk. Kancelaria Radcow Prawnych "CIC" Pikor, Behnke, Dmoch, Fryzowski Sp. p., DCT Gdansk SA, Gdansk

2. Ornithology Mitigation Review

2.1 Protected Areas and Sites of Biodiversity Importance

The Vistula River Mouth Ramsar site is located approximately 4.5km from the proposed project area and therefore impacts to this site are not anticipated directly. Indirect impacts such as pollution from dredging activities or impacts to qualifying species require assessment and are therefore considered in further detail below.

2.2 Tern Species

The marine and terrestrial EAAA has been identified as Critical Habitat (CH) for common tern and little tern, and sandwich tern has been identified as a Priority Biodiversity Feature (PBF). The main driver for assigning CH and PBF is primarily due to the important concentrations of these tern species within the Vistula River Mouth Ramsar site.

Ornithological monitoring undertaken as part of the mitigation implemented for the original port development (Terminal T2) has been reviewed and considered in the impact assessment for birds: Report with ornithological monitoring of compensation specified in the decision on environmental conditions for the project "Construction of the Container Terminal T2" RDOŚ-Gd- 00.4211.29.2013.AT.9 number of March 28, 2014, and obligations contained therein imposed on DCT Gdańsk Sp. z o. o. in 2021.

Figure 1 presents the compensation and mitigation measures area for birds designated due to the construction of the Terminal T2.

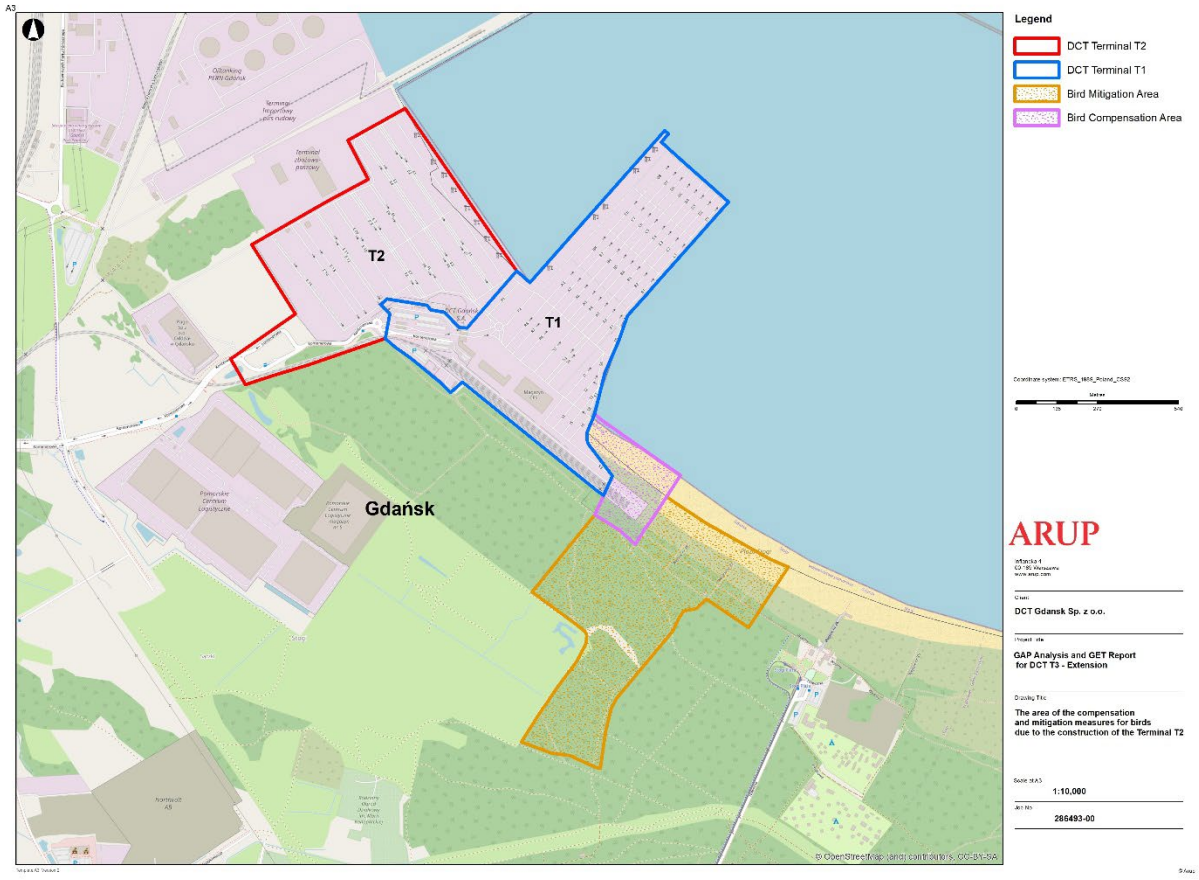

Figure 1. The area of the compensation and mitigation measures for birds due to the construction of the Terminal T2

Little tern *Sternula albifrons,* common tern *Sterna hirundo* and sandwich tern *Thalasseus sandvicensi* are all present within the project area and the wider EAAA. It is possible that little tern nest on the beach adjacent to the port in a biodiversity compensation area that was installed as part of the mitigation for the construction of the original port. A pair of little terns was observed during bird monitoring studies and was noted to be on site

for sufficient time to be considered as probable breeding; however, as the nest was not directly observed this cannot be confirmed. Common tern has been observed during the monitoring and are also known to nest on the Ore Pier ("Pirs Rudowy") to the north-east of the port. There is no record of sandwich tern nesting in the compensation area.

The Vistula River Mouth Ramsar site is situated approximately 15km to the east of the proposed port development area. This site is one of the most important areas in the country for migratory and wintering coastal waterbirds and the only nesting site in Poland of the sandwich tern and one of the most important nesting sites for the little tern and the common tern.

The Critical Habitat Assessment has concluded that the EAAA has been assigned as Critical Habitat (on a precautionary basis) for little tern *Stenula albifrons,* common tern *Sterna hirundo* and sandwich tern *Thalasseus sandvicensi.*

2.2.1 Potential Impacts – Tern Species

The expansion of the port could impact bird species nesting on the beach in the compensation area during construction, operation and decommissioning phases. The primary impacts identified are noise and visual disturbance and deterioration in water quality.

2.2.2 Noise and Visual Disturbance – Tern Species

The expansion of the port could impact tern species nesting on the beach in the compensation area during construction, operation and decommissioning phases. Disturbance from noise during piling operations and visual disturbance from construction operations could reduce use of the beach area and dissuade birds from nesting. If nests are established prior to piling operations, then this could cause the abandonment of nest sites.

Deterioration of water quality, including increased sedimentation during construction (particularly during dredging and piling operations) is likely on a localised basis; however, this will be mitigated by the use of silt curtains and other pollution prevention methods secured via the Dredging Management Plan. The mobilisation of sediments and resulting 'sediment plume' could impact on the bird's ability to capture prey items due to turbid water leading to reduced visibility for foraging birds in the immediate vicinity of such activities. Reduced water quality could also result in the death or injury of fish and crustaceans within the area of impact of reduced water quality leading to a reduction in prey items. It is anticipated that the sediment plume during construction may increase turbidity locally in the vicinity of the proposed port expansion site during dredging operations between September to March (inclusive) and will be managed via the mitigation referenced above. The level of suspended material will fluctuate depending on the dredging and piling operations performed. Foraging ranges for tern species are generally up to 10km from the nearest colony although common terns have been recorded foraging up to 37km from the nearest colony[2]. Little tern, show a preference for foraging closer to the colony, and a study in Spain recorded that 95% of foraging little tern were observed less than 4km from the nearest colony[3]. As such, the localised effect of dredging, combined with dredge management mitigation, is not considered likely to impact the tern foraging area.

Impacts on tern species during operation may include noise and visual disturbance during the operation of the port, but this is considered to be significantly reduced in terms of impact when compared with construction stage impacts. It is considered likely that birds will become habituated to the operational noise over time, and this is unlikely to prevent avoidance of the beach area due to the reduced operational noise levels.

Decommissioning impacts on tern species are likely to be very similar to construction impacts and likely to include noise and visual disturbance, mobilisation of sediments and potentially reduced water quality during decommissioning activities. Decommissioning activities will be assessed according to the baseline and standards of the time.

[2] Birdlife International Data Zone – Common Tern species factsheet (accessed 26.05.2022) (http://datazone.birdlife.org/species/factsheet/common-tern-sterna-hirundo/text

[3] Birdlife International Data Zone – Little Tern species factsheet (accessed 26.05.2022) http://datazone.birdlife.org/species/factsheet/little-tern-sternula-albifrons/text

2.3 Bird Assemblage within Zatoka Pucka SPA

Long-tailed duck *Clangula hyemalis* and horned grebe *Podiceps auratus* have been assigned as priority biodiversity features within the EAAA. It should be noted that there are many other bird species present within the Zatoka Pucka SPA; however, the species discussed have been identified as priority biodiversity features via the CHA. As the little ringed plover *Charadrius dubius* and the common ringed plover *Charadrius* hiaticula (which are also the features of Zatoka Pucka SPA) are known to nest within the biodiversity compensation area that was created as part of the mitigation for the original port development (Terminal T2), those species were also considered in the Review.

Long-tailed duck and horned grebe have been identified as priority biodiversity features. Horned grebe *Podiceps auratus* has been observed in close proximity to the port along with three additional grebe species (great crested grebe *Podiceps cristatus*, black-necked grebe *Podiceps nigricollis and* little grebe *Tachybaptus ruficollis*). It is considered likely that grebes are foraging around the port structures along with other diving birds such as mergansers and cormorants. Long-tailed duck are likely to be present within the EAAA; however, they have not been recorded during the monitoring for the compensation area.

2.3.1 Little Ringed Plover

During monitoring of the compensation area (adjacent to the old railway siding) a single pair of little ringed plover nesting was observed in 2020; however, there were no other observations of this species during the monitoring period reported.

2.3.2 Common Ringed Plover

During monitoring undertaken in 2020, a single pair of common ringed plovers attempted to nest in the compensation area along with another pair that nested in an adjacent area of the beach. Both nesting attempts were observed to fail; however, it was noted that generally nesting success was reduced in the general area in 2020 due to poor weather conditions and increased predator numbers. Monitoring of the compensation area shows that a total of 18 broods of common ringed plover have been observed between 2014 and 2021. Two broods were recorded in the compensation area during monitoring in 2021.

Generally, common ringed plover is considered to be relatively tolerant to disturbance which would align with the continued nesting within the compensation area adjacent to the existing port. The Waterbird Disturbance Mitigation Toolkit[4] states the following with regard to common ringed plover:

"Ringed Plover are thought to be an extremely tolerant species that habituates to anthropogenic activities rapidly. They are also tolerant of people, allowing approach as close as 30-50m before flushing when confronted with a lone walker on the mudflat. There is no published evidence with regard the Ringed Plover's reaction to noise or construction works, but it is likely that again they have a high threshold to such activities given their general high tolerance. Observation of disturbance impacts suggest response to construction activity is consistent with wider disturbance tolerances reported from earlier research, with birds approaching works to within 20m on occasion. However, at distances within 50m from a disturbance source they would readily flush, only to land nearby and continue foraging almost immediately. At distances of over 100m from activity birds rarely showed any sign of disturbance and appeared often unperturbed when other species in their vicinity were reacting. Ringed Plovers were observed to not react to any noise stimuli, despite exposure to noise levels up to 88dB from aircraft flying overhead".

2.3.3 Common Merganser

Common Merganser *Mergus merganser* nest boxes were installed in the compensation area for T2 and this species has nested in the compensation area in all years between 2014 and 2020 with the exception of 2016.

Nesting mergansers are considered relatively sensitive to disturbance from noise including during egg incubation and following the hatching of fledgelings. Visual and noise disturbance events may lead to abandoned nest sites or fledgelings.

[4] N Cutts, K Hemingway & J Spencer (Version 3.2, March 2013) Copyright University of Hull; Waterbird Disturbance Mitigation Toolkit (Informing Estuarine Planning & Construction Projects).

2.3.4 Common Shelduck

Artificial burrows were installed for common shelduck *Tadorna tadorna* part of the mitigation for the original port development (T2). In total 10 artificial burrows were installed, constructed of concrete rings and entrances made of plastic pipes with a diameter of 20 cm. Nine of the burrows were moved to new locations in 2019 due to the extension of the railway siding within the compensation area. In 2020 and 2021, no common shelduck were recorded during the monitoring surveys although the artificial burrows were not inspected in 2020.

2.4 Bird Assemblage

The expansion of the port could impact bird species nesting on the beach in the compensation area during construction, operation and decommissioning phases. The primary impacts identified are noise and visual disturbance and deterioration in water quality.

2.4.1 Noise and Visual Disturbance - Bird Assemblage

Disturbance from noise during piling operations and visual disturbance from construction operations could reduce use of the beach area and dissuade birds from nesting. If nests are established prior to piling operations, then this could cause the abandonment of nest sites. Merganser and common ringed plover regularly nest on the beach within the compensation area as observed in the monitoring between 2014 and 2021. The EIA Report states that anticipated noise levels emitted during the operation of the dredgers will not exceed LA = 90dB. Construction machinery (e.g. cranes, dozers etc) will not exceed LAW=105dB. These levels of construction noise in combination with piling operations may exceed levels of tolerance for nesting birds within the compensation area and may therefore cause disturbance when considered in combination with visual disturbance during construction activities.

Disturbance during operations could lead to reduced use of the compensation area; however, the distance from the beach to the new port location is approximately 300m and the forecast noise levels on the beach are a maximum of 40.9 LAeq (dB).

The Waterbird Disturbance Mitigation Toolkit includes a review of acceptable noise levels based on the observed responses of waterbirds to various noise stimuli. The Toolkit indicates the standard distance decay rates for noise and enables the user to calculate the likely disturbance effect for a noise level and distance of receptor from source. Based on the maximum operational noise of 40.9 LAeq (dB) and review of the Toolkit, it is considered that the noise levels are below the 70dB of 'acceptable' dose levels.

Disturbance to birds present during passage (spring and autumn) and winter seasons will occur during dredging, piling and additional construction activities. Aggregations of birds in the proximity of the construction area will be displaced during construction; however, this is temporary disturbance during construction. It should be noted that there is a baseline level of noise and visual disturbance occurring at present due to the ongoing operations of the T2 port and therefore some resident birds will be relatively tolerant and habituated to disturbance events.

2.4.2 Deterioration in Water Quality

As identified within the review of effects on tern species, increased sedimentation during construction (particularly during dredging and piling operations) may affect foraging opportunities for diving species due to reduced visibility or reduction in prey resources in the vicinity of such activities. Mitigation to reduce turbidity will include the use of silt curtains and will therefore limit the spread of the sediment plume to a very localised area, and not impacting on the wider tern foraging habitat.

3. Outline Ornithological Mitigation

Outline ornithological mitigation measures are provided below however these should be finalised with the EPC Contractor's Biodiversity Management Plan due to the identified priority biodiversity features: long-tailed duck *Clangula hyemalis* and horned grebe *Podiceps auratus,*and critical habitat identified for: little tern *Sternula albifrons*, common tern *Sterna hirundo* and sandwich tern *Thalasseus sandvicensi,* and to comply

with EBRD PR6. Following EBRD PR6 requirements it is important to remembered while planning and implementing the construction works of Terminal T3 that:

"Critical habitat must not be converted or degraded. Consequently, in areas of critical habitat, the client will not implement any project activities unless the following conditions are met:

- *Compliance with any due process required under international obligations or domestic law that is a prerequisite to a country granting approval for project activities in or adjacent to a critical habitat has been complied with.*
- *There are no measurable adverse impacts, or likelihood of such, on the critical habitat which could impair its ability to function in the way(s) outlined in paragraph 13.*
- *Taking a precautionary perspective, the project is not anticipated to lead to a reduction in the population of any endangered or critically endangered species or a loss in area of the habitat concerned such that the persistence of a viable and representative host ecosystem be compromised.*
- *Notwithstanding the above, all other impacts are mitigated in accordance with the mitigation hierarchy."*

As the Vistula River Mouth site (protected as Ramsar site, SPA, Ptasi Raj and Mewia Lacha Nature Reserves) is the most important area for bird species within the EAAA therefore mitigation measures to avoid adverse impacts to this site has been included in the Review and as such no adverse impacts or reduction in bird populations are anticipated.

4. Bird Mitigation Protocol

The key mitigation for birds is for construction stages (including dredging operations) to avoid the breeding season to avoid noise and visual disturbance to nesting birds within the compensation area and surrounding habitats.

The following outline mitigation measures for birds include:

- Dredging operations will avoid the most sensitive time of year for nesting birds including breeding, nesting and fledging of chicks; April to August (inclusive). This is in accordance with the Environmental Decision (2019).
- Mooring of vessels at breakwaters should be limited as much as possible between April and July to avoid disturbance to nesting birds. This is in accordance with the Environmental Decision condition (2019).
- All piling and dredging operations will accord with the soft-start requirements within the Marine Mammal Mitigation Protocol (full details are provided in Appendix A – Marine Mammal Mitigation Review).
- Visual monitoring of the sediment plume produced during dredging should be conducted to ensure it does not reach the Vistula River Mouth Ramsar site.
- Where required, new interpretation boards should be installed on the fence of the T2 compensation area and surrounding locations to highlight the importance of the site for nesting birds.
- Regular monitoring of the original T2 compensation area should continue to collect data on bird species nesting within the compensation area. It is suggested that a continuation of the monitoring that has been undertaken as part of T2 continues, including surveys within each breeding season for 5 years post-development of T3. The monitoring schedule and duration / methods should follow those deployed as part of the T2 monitoring and include surveys for little ringed plover, common ringed plover and little tern to assess the number of breeding pairs each year.
- Consultation with relevant authorities:Regional Director for Environmental Protection in Gdansk and the Chief Inspector of Environmental Protection, should be undertaken to inform the bird monitoring schedule and scope and allow sharing of data.
- Monitoring of the compensation area should include the collection of rubbish and maintenance of the fence and signs to ensure they remain effective in reducing disturbance that may impact breeding success.
- Pollution impacts to the marine, intertidal and terrestrial environment from piling and dredging operations will be mitigated via pollution prevention controls such as silt curtains. This mitigation will be implemented in adherence to best practice measures (in accordance with the project control documents) and is secured via the Dredging Management Plan.
- All construction equipment should have relevant CE certifications confirming its compliance with Directive 2000/14/EC of the European Parliament and of the Council of 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors and other relevant legislation pertinent to CE certification. DCT to verify such compliance with CE on spot check basis.