

Norfolk Projects Offshore Wind Farms

Kittiwake

**Implementation and
Monitoring Plan**

**Annex 3 Kittiwake Nesting Success on
Artificial Structures: Additional Photos**

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ANNEX C. EXAMPLES OF KITTIWAKE NESTS IN THE DUNBAR HARBOUR COLONY



Photo C.1. Dunbar Harbour with the eroded walls of the castle at the west end of the harbour. Kittiwakes nest on the eroded castle walls despite high human activity on the harbour edge under the walls, and on natural cliff habitat around the harbour mouth; May 2021.



Photo C.2. Closer view of part of the castle wall with numerous kittiwake nests, and an area of natural rock cliff to the right with a few nests; May 2021.



Photo C.3. Example of eroded castle wall with kittiwake nests; May 2021.



Photo C.4. An area of natural cliff at Dunbar with kittiwake nests; May 2021.



Photo C.5. Kittiwake nests on eroded castle wall facing west at the harbour mouth, and parts of the 'club' area below the colony (indicated by 'whitewash' on the rocks as well as presence of birds) where nonbreeding kittiwakes tend to rest on the rocks; May 2021.

ANNEX D. EXAMPLES OF KITTIWAKE NESTS IN THE TYNE COLONIES

D.1. Tynemouth



Photo D.1.1. Tynemouth, from the south-east, showing part of the natural cliff and the part buttressed with concrete erosion defence arches; kittiwakes nest on the natural cliff and under the concrete arches; May 2021.



Photo D.1.2. Tynemouth, showing an example of kittiwake nests on the natural cliff habitat; May 2021.



Photo D.1.3. Tynemouth, showing an example of kittiwakes nesting on the natural rock face but under the concrete arch of erosion defence; May 2021.



Photo D.1.4. Tynemouth, showing another example of kittiwakes nesting on the natural rock face but under the concrete arch of erosion defence. Note in this case much water seepage from the cliff that could affect nests; May 2021.

D.2. Akzo Nobel



Photo D.2.1. Akzo Nobel, showing rows of kittiwake nests on narrow ledges on the north-facing side of the industrial buildings immediately on the south bank of the River Tyne; May 2021.



Photo D.2.2. Akzo Nobel, showing kittiwake nests on window ledges on the north-facing side of the industrial buildings on the south bank of the River Tyne; May 2021.

D.3. Saltmeadows tower, Gateshead



Photo D.3.1. Saltmeadows tower, Gateshead, set within a fenced hay meadow and with an interpretation board at the nearest road access point; photographed from the south-west, May 2021.



Photo D.3.2. Saltmeadows tower, Gateshead, photographed from the south-east, showing its lean off vertical that increases solar exposure for nests on the South-West face and reduces exposure for nests on the East face; May 2021.



Photo D.3.3. South-West face of Saltmeadows tower, Gateshead; May 2021.



Photo D.3.4. East face of Saltmeadows tower, Gateshead; May 2021.



Photo D.3.5. North face of Saltmeadows tower, Gateshead; May 2021.

D.4. Baltic Arts Centre, Gateshead



Photo D.4.1. Baltic Flour Mill (Baltic Arts Centre, Gateshead), from the Newcastle Quayside of the river looking across the Millennium Bridge. Kittiwakes nest mainly on the two long ledges above and below the name; May 2021.



Photo D.4.2. Part of north face of Baltic Flour Mill; May 2021.



Photo D.4.3. East face of Baltic Flour Mill, showing kittiwakes nesting on top of anti-bird spikes; May 2021.

D.5. Guildhall



Photo D.5.1. Kittiwake nesting on top of exclusion netting on Guildhall (note also deployment of anti-bird spikes); May 2021. Most kittiwakes have been excluded from the walls of the Guildhall, and have moved onto the clock tower where they are not excluded (Photo D.5.2).



Photo D.5.2. Guildhall clock tower; July 2021.

D.6. Street lamps



Photo D.6.1. Kittiwake nest (with two chicks) on street light; July 2021.

D.7. Phoenix House



Photo D.7.1. Phoenix House with some kittiwake nest sites high up on the building (shown in Photos D.7.2 and D.7.3); May 2021.



Photo D.7.2. Phoenix House (photographed from Tyne Bridge) showing an unusually wide ledge being used by kittiwakes and exclusion netting attached to that ledge with kittiwake nests built on top of the netting; July 2021.



Photo D.7.3. Phoenix House with kittiwakes nesting on top of exclusion netting; May 2021.

D.8. Floodlight rig



Photo D.8.1. Floodlight rig with three kittiwake nests; May 2021.

D.9. Lombard House



Photo D.9.1. Kittiwakes nesting high up on Lombard House; May 2021.

D.10. Queen Street



Photo D.10.1. Queen Street – general view – kittiwake nest and other occupied sites (without nests) above 2nd floor windows; May 2021.



Photo D.10.2. Queen Street – closer view of kittiwake nest on ledge; May 2021.

D.11. Railway Bridge, Dean Street



Photo D.11.1. Part of Dean Street railway bridge occupied by nesting kittiwakes all along the ledge; May 2021.

D.12. Redhouse



Photo D.12.1. Part of Redhouse, with kittiwake nests above the 1st floor windows; May 2021.

D.13. St Mary's Heritage Centre, Gateshead



Photo D.13.1. Kittiwake nest, an incomplete nest and several occupied sites without nests on St Mary's Heritage Centre, Gateshead; May 2021.

D.14. High Level Bridge



Photo D.14.1. One of the pillars of the High Level Bridge with a few kittiwake nests and numerous occupied sites that do not have nests; May 2021.

D.15. Vermont Hotel and Vermont Aparthotel



Photo D.15.1. Three kittiwake nests on ledges above windows on Vermont Hotel; May 2021.



Photo D.15.2. Kittiwake nests on the end wall of Vermont Aparthotel, Newcastle Quayside; May 2021. The plastic falcon did not scare kittiwakes!

D.16. Tyne Bridge



Photo D.16.1. Tyne Bridge. Large numbers of kittiwakes nest on the stone ledges of the abutments, but also in some places on the girders; May 2021.

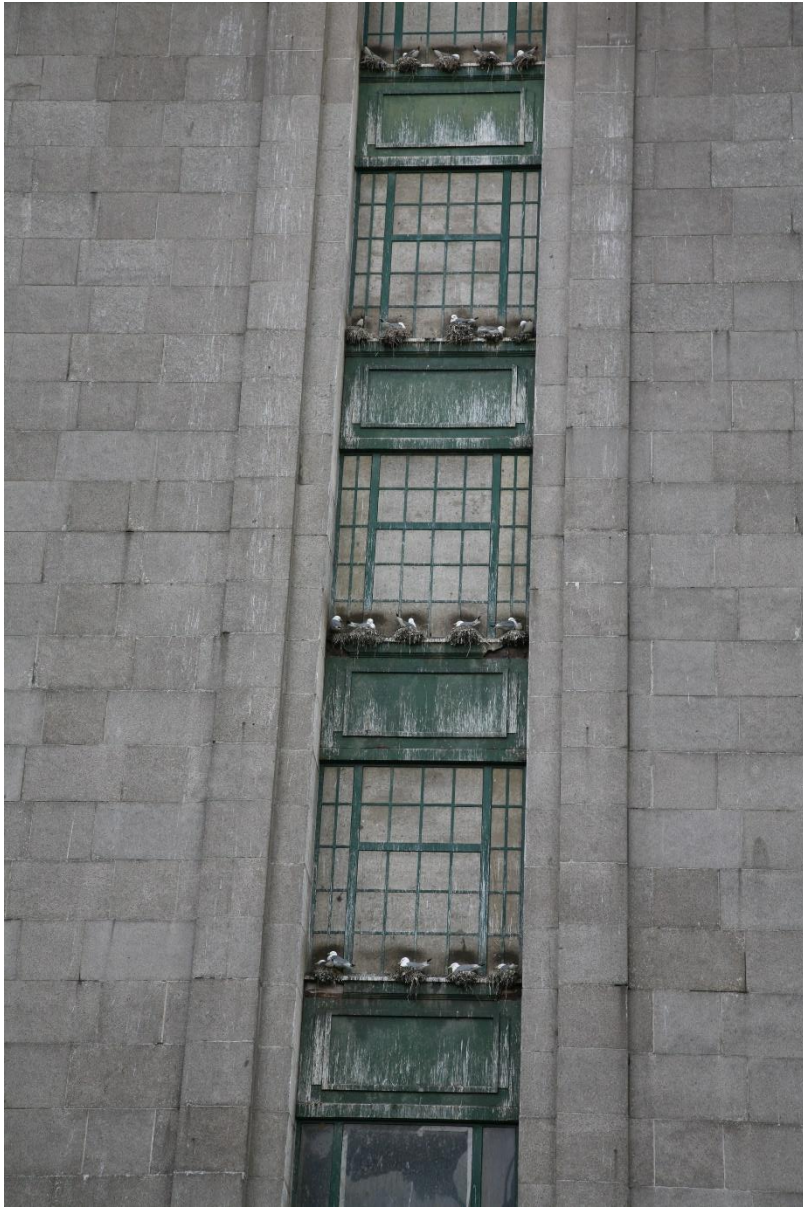


Photo D.16.2. Tyne Bridge. Kittiwakes nesting on the chipboard ledges and coverings of windows in the abutment towers; May 2021.



Photo D.16.3. Tynemouth Bridge. Kittiwakes nesting in window ledge slits, on the ledge around the balcony, on the stonework above windows, and along the ledge just below the top of the abutment; May 2021.



Photo D.16.4. Tyne Bridge kittiwake nests along stone ledges; May 2021.



Photo D.16.5. Kittiwakes nest on the abutments above the road, close to passing heavy traffic, as well as on levels below the road; May 2021.



Photo D.16.6. Tyne Bridge. Kittiwakes nest along the stone ledge immediately behind the railings of the bridge, within easy arm's reach from the pavement; May 2021.



Photo D.16.7. Tynes Bridge. A row of kittiwakes nest along the girders below the bridge on the south (Gateshead) side of the river; May 2021.



Photo D.16.8. Tyne Bridge. Some kittiwake nests on girders appear precariously positioned on a steeply sloping narrow metal beam; May 2021.

ANNEX E. EXAMPLES OF KITTIWAKE NESTS IN THE LOWESTOFT COLONIES

E.1. Claremont Pier



Photo E.1.1. Claremont Pier south side. Kittiwakes mostly nest from the vertical post seaward of the metal pole to the area with numerous metal poles; all nests are on the tops of vertical posts, or on the horizontal beam supported by the vertical posts, under the overhang of the pier platform. Very few nest on the far part of the pier, and none on the landward end, suggesting that birds are avoiding potential nest sites with highest risk of access for human disturbance or mammal predators, and avoid areas of highest risk of sea spray and waves during storms; May 2021.



Photo E.1.2. Claremont Pier south side showing positions of some nests; May 2021.



Photo E.1.3. Claremont Pier north side showing positions of some nests; May 2021.



Photo E.1.4. Far end of Claremont Pier, showing part of the 'club' flock of immature kittiwakes roosting on the pier; June 2021.

E.2. Waveney Dock



Photo E.2.1. Part of the Waveney Dock kittiwake nesting area, showing the birds nesting on timber and tyres, close to the water; May 2021.



Photo E.2.2. Another part of the Waveney Dock kittiwake nesting area, showing the birds nesting on timber and tyres, close to the water; May 2021.

E.3. Trawler Dock



Photo E.3.1. Part of the Trawler Dock kittiwake nesting area, showing the birds nesting on timber posts, close to the water; May 2021.

E.4. Our Lady Star of the Sea RC Church



Photo E.4.1. Kittiwakes nesting high up on the tower on Our Lady Star of the Sea RC Church; May 2021. Kittiwakes nest in large numbers on all four sides of the tower.



Photo E.4.2. Smaller numbers nest lower down on the church tower; May 2021.



Photo E.4.3. Church tower in July, showing good numbers of nearly-fledged chicks.

E.5. Commercial Road



Photo E.5.1. Properties in Commercial Road; May 2021.



Photo E.5.2. Examples of kittiwake nests on 19 Commercial Road; May 2021.



Photo E.5.3. Examples of kittiwake nests on 18 Commercial Road; May 2021.



Photo E.5.4. Examples of kittiwake nests on 17 Commercial Road; May 2021.



Photo E.5.5. Examples of kittiwake nests on 12 Commercial Road; May 2021.

E.6. Station Square



Photo E.6.1. Examples of kittiwake nests on 11 Station Square. Note that the front of the building above Papa John's has exclusion netting newly fitted to prevent kittiwakes from occupying sites on that part of the building; May 2021.



Photo E.6.2. Closer view of kittiwake nests on 11 Station Square; May 2021.



Photo E.6.3. Kittiwake nesting on top of street light in Station Square, possibly having relocated from the building behind which had exclusion netting added earlier in 2021; May 2021.



Photo E.6.4. The Station Square building above Papa John's, where the upper part of the building front has had exclusion netting fitted early in 2021. Kittiwakes now nest on window ledges on the end of the building that had not previously been occupied; June 2021.

E.7. Waveney Road



Photo E.7.1. Kittiwakes nesting on the Columbus Building, despite presence of anti-bird spikes along the ledges; May 2021. These nests overlook the busy A47 trunk road through Lowestoft, and immediately across the road is the major construction work for the enhanced flood defences.



Photo E.7.2. Kittiwakes nesting on 23 Waveney Road, adjacent to the Columbus Buildings, Waveney Road; May 2021.



Photo E.7.3. Kittiwakes nesting on building on Waveney Road, shared also by two pairs of lesser

black-backed gulls (nesting further left). These kittiwake nests are somewhat unusual in being exposed on top of the roof, but Google Streetview images show that this site did not hold any breeding kittiwakes in July 2019 and there were no kittiwake nests there in 2017 (CH2M 2017); Photo June 2021.

E.8. Ice Factory



Photo E.8.1. Kittiwakes nesting on the Ice Factory wall; May 2021.



Photo E.8.2. A lone kittiwake nest on a wall of the Ice Factory; May 2021.



Photo E.8.3. Kittiwake nest on window ledge of the Ice Factory; May 2021.

E.9. Battery Green Road



Photo E.9.1. General view of houses on Battery Green Road (A47); May 2021.



Photo E.9.2. Upper floor of 9 Battery Green Road; May 2021.



Photo E.9.3. Upper floor of 3 Battery Green Road; May 2021.

E.10. Suffolk Road including Beach Mews



Photo E.10.1. Kittiwake nests in Beach Mews, Suffolk Road; May 2021.



Photo E.10.2. 26 Suffolk Road; May 2021.



Photo E.10.3. Close-up of kittiwakes incubating eggs in nests on anti-bird spikes and adjacent to a 'deterrent' plastic owl (with rotating head that turns in the wind) at 26 Suffolk Road; May 2021. Both these nests held chicks in July.



Photo E.10.4. Close-up of kittiwakes in nests on anti-bird spikes on bricked-up window ledges at 26 Suffolk Road; May 2021.



Photo E.10.5. Lone kittiwake nest on 8 Suffolk Road (pink frontage); May 2021.

E.11. Marina Theatre



Photo E.11.1. Front of Marina Theatre, with kittiwake nests on upper window ledges; May 2021.



Photo E.11.2. Kittiwake nests on part of Marina Theatre; May 2021.



Photo E.11.3. Kittiwake nests on side of Marina Theatre (near Stage Door entrance); May 2021.

E.12. Marina House



Photo E.12.1. Kittiwake nests on 2nd floor ledge and window ledges of house next door to Marina Theatre; May 2021.

E.13. Grove Road



Photo E.13.1. Kittiwake nests on the upper part of 11 Grove Road (above The Lowestoft Music Shop); May 2021.



Photo E.13.2. Kittiwake nests on 18 Grove Road (nesting on anti-bird spikes); May 2021.



Photo E.13.3. A kittiwake nest (in the corner) and several occupied sites without nests, on a ledge of the rear of Boots building; May 2021.

E.14. Bevan Street East



Photo E.14.1. A lone kittiwake nest on the gutter above Lowestoft Carpet & Rug Co, 126 Bevan Street East; May 2021.

E.15. Clapham Road South



Photo E.15.1. Kittiwake nests on the end wall of 13 Clapham Road South, across the road from the BT building; May 2021.



Photo E.15.2. BT building (the grey slate-tiled structure behind the red brick car park). Much of this building was fitted with exclusion netting early in 2021, but adverse publicity led BT to remove some of that netting in early May and to put up artificial ledges on one wall of the building to allow kittiwakes to relocate onto that area. Despite these actions, some kittiwakes managed to continue to use sites on window ledges and other ledges; May 2021.



Photo E.15.3. Kittiwakes nesting on ledges above windows on the side of the BT building; May 2021.



Photo E.15.4. Kittiwakes nesting on a window ledge on the BT building; May 2021.



Photo E.15.5. Artificial ledges put up on the BT building in early May 2021, showing some occupancy by kittiwakes by late May (Photo taken on 26 May 2021), but little nest building by that date (unlike the nearly completed nests at most other sites).



Photo E.15.6. Artificial ledges put up on the BT building, showing increased occupancy and much more nest building activity by late June than had occurred by late May (Photo taken on 20 June 2021).



Photo E.15.7. Artificial ledges put up on the BT building, showing the situation on 19 July 2021. By that date, most kittiwake nests at other sites in Lowestoft held chicks that were within a few days of flying (see for example Photo E.16.5. taken on the same day). Very few of the nests held chicks, and the few chicks produced were still very young, presumably reflecting the interruption to breeding caused by the birds having to relocate onto this new site in May. Some sites occupied in June had been abandoned by late July, but the prospects for breeding on these ledges seems likely to be good for 2022, given that many birds have already settled here. The tree rather close to the ledges may possibly require some pruning to prevent it from becoming a problem for kittiwakes in future. BT have now put an information panel, explaining the importance of kittiwake conservation, on the roadside below the ledges.

E.16. Surrey Street



Photo E.16.1. Surrey Street, showing kittiwakes nesting on two buildings (Surrey Chambers on left and 19 Surrey Street); Photo May 2021.



Photo E.16.2. Number 19 Surrey Street; May 2021.



Photo E.16.3. Surrey Chambers, Surrey Street; May 2021.



Photo E.16.4. Example of an individually colour-ringed adult at nest on Surrey Chambers; July 2021.



Photo E.16.5. Number 13 Surrey Street; May 2021.



Photo E.16.6. Part of Number 13 Surrey Street on 19 July 2021, with chicks in nests.

E.17. London Road North



Photo E.17.1. Kittiwake nests on 41 London Road North (above Subway); May 2021.



Photo E.17.2. Kittiwake nest on 45 London Road North; May 2021.



Photo E.17.3. Kittiwake nest on 45 London Road North; May 2021.



Photo E.17.4. Number 59 London Road North; May 2021.



Photo E.17.5. Number 59 London Road North; May 2021.



Photo E.17.6. 60 London Road North; May 2021.

E.18. Pier Terrace



Photo E.18.1. Pier Terrace, with kittiwakes nesting on the end of terrace building; June 2021.



Photo E.18.2. Closer view of some of the kittiwake nests on Pier Terrace; June 2021.

E.19. Britten Shopping Centre roof



Photo E.19.1. Kittiwake nests on the roof of the Britten Street shopping centre; July 2021. This appears to be a new nesting site, apparently not used in previous years according to local shopkeepers. These nests appear to be at particularly high risk of being washed off if there had been heavy rain.

E.20. Gordon Road



Photo E.20.1. This warehouse site on Gordon Road was overlooked in May and so not included in the study of nest site features and breeding success; Photo June 2021.



Photo E.20.2. Nests with broods of two and one chick, Gordon Road warehouse; Photo July 2021.



Photo E.20.3. House on Gordon Road with kittiwake nest under the gable-end eaves; July 2021.



Photo E.20.4. Kittiwake nest with two chicks on house on Gordon Road; July 2021.