

Summary of Black-legged Kittiwake *Rissa tridactyla* breeding data recorded on the River Tyne, northeast England, during 2017

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These data include all known River Tyne breeding locations

Key: AON	Apparently Occupied Nests (well-built nests capable of containing eggs, with at least one adult present)
n/c	Not counted
Breeding Productivity	Minimum number of young fledged per Apparently Occupied Nest
TKP	Tyne Kittiwakes Partnership
A 'trace' nest	A nest not yet completed nor capable of holding eggs.

Part One: Summary

Table 1. 2017 Summary: Kittiwake AON and breeding productivity on River Tyne.

Location	Min AON (June 1 - 11)	Chicks (July 7 to 15)	Min. prod.	% of failed nests
1. Tynemouth cliffs (natural site)	332	370 (152 x 1, 106 x 2, 2 x 3)	1.11	21.7 %
2. N Shields Ferry Landing	15	17 (8 x 1, 3 x 2, 1 x 3)	1.13	20.0 %
3. Port of Tyne, S Shields, Tower	0	0	---	---
4. McNulty, Tyne Dock	0	0	---	---
5. Akzo Nobel, International Paints	193	236 (80 x 1, 78 x 2)	1.22	18.1 %
6. Kittiwake Tower (Gateshead)	115	84 (52x1, 16x2)	0.73	40.9 %
7. Baltic Flour Mill (Arts Centre)	119	140 (68x1, 36x2)	1.18	12.6 %
8. NCL quay bldgs.: Vermont ApartHot	14	10 (6x1, 2x2)	(0.71)	(42.9 %)
9. NCL quay bldgs.: Shilling (between Vermont ApartHot & Phoenix House)	10	17 (5x1, 6x2)	(1.70)	(0.0 %)
10. NCL quay bldgs.: Phoenix House	25	31 (9x1, 11x2)	1.24	20.0 %
11. NCL quay bldgs.: Akenside Studios	1	1 (1x1)	(1.00)	(0.0 %)
12. NCL quay bldgs.: Akenside Traders	0	0	---	---
13. NCL quay bldgs.: R/way Bridge	44	46 (20x1, 13x2)	1.05	25.0 %
14. NCL quay bldgs.: 1 Queen St	0	0	---	---
15. NCL quay bldgs.: Lombard Ho.	7	6 (4x1, 1x2)	(0.86)	(28.6 %)
16a. NCL qb: Redhouse (opp. Guildhall)	2	1 (1x1)	(0.50)	(50.0 %)
16b. NCL qb: Rasika, beside Redhouse	1	1 (1x1)	(1.00)	(0.0 %)
17. Tyne Bridge – North abutment	375	332 (188x1, 69x2, 2x3)	0.89	30.9 %
18. Tyne Bridge – North abut. girders	83	78 (44x1, 17x2)	0.94	26.5 %
19. Tyne Bridge – South abutment	181	188 (83x1, 51x2, 1x3)	1.04	25.4 %
20. Tyne Bridge – South abut. girders	50	39 (31x1, 4x2)	0.78	30.0 %
21. Newcastle quayside: Guildhall	72	93 (33x1, 30x2)	1.29	12.5 %
22. High Level Bridge	1	0	0.0	(100 %)
23. Brett Oils / Ovoline	0	0	---	---
Totals (including Tynemouth)	1640	1690 (786 x 1, 443 x 2, 6 x 3)	1.03	24.7 %
Totals (excluding Tynemouth)	1308	1320 (634 x 1, 337 x 2, 4 x 3)	1.01	25.5 %

Notes:

- 1) One chick was reported from the Baltic on 1 June. No other chicks were reported when 193 aon were checked this day.

- 2) On 2 June, when 601 aon were surveyed, 3 small single chicks were observed at the Baltic. There may have been other small chicks sheltered by adults, but no more were seen this day.
- 3) On 3 June, when an additional 314 aon were surveyed, an additional seven small chicks were observed.
- 4) No kittiwakes were seen this season on Akenside Traders where the optical gel petri dishes had been placed in the winter of 2015/2016.
- 5) In the period 1-3 June, 21 trace nests were recorded at river sites.
- 6) 2 June, Saltmeadows (Gateshead) Tower: one pair mating; one dead adult hanging, entangled in anglers line.
- 7) 2 June, very first nest recorded on High Level Bridge – low on support close to Gateshead side of river. There was also a trace nest and a pair starting to build another nest.
- 8) 3 June, one small chick was watched being fed at girders of Tyne Bridge, north bank of river, west side.
- 9) 2 June produced five aon and 3 trace nests on the main east aspect ledge of the Baltic; on 5 June these were noted as eight aon (ie the three trace nests had been completed).
- 10) 5 June, while surveying the north abutment of the Tyne Bridge three small chicks were noted – one in each of three nests. Six trace nests were also noted there on the same day.
- 11) 5 June, two small chicks were watched well hidden in nests at the Guildhall, photographed.
- 12) 5 June, three good-sized pieces of broken egg shell noted beneath the Baltic north ledges.
- 13) Considerable rain on Tyneside 5-7 June and (9) June.
- 14) 11 June, one small chick noted at Tynemouth cliffs during survey of 332 aon and 4 trace nests.
- 15) Around 25 May a nest on the north of the Tyne Bridge, at road level, east side, was reported with four eggs. No further reports were received about this nest. This may have been the result of a female-female-male patnership (Coulson, 2011) with potentially infertile eggs.
- 16) Port of Tyne (Stuart McLeod) reported no nesting kittiwake presence at the previous McNulty engineering workshop on their land at Tyne Dock.
- 17) The first fledged juvenile was reported in flight at Newcastle quayside on 8 July.
- 18) On 13 July, 22 fledged juveniles had gathered on the Tyne between the Millenium Bridge and Swing Bridge by 4:30 pm. There were an additional three fledged juveniles resting on top of the Guildhall at Newcastle quayside.
- 19) Between 8 and 18 July, the author collected and stored frozen eleven kittiwake nestlings which had fallen from nests and died in Newcastle-Gateshead. These were intended for future studies.
- 20) At least twelve live kittiwake nestlings were handed to animal charity 'Pawz for Thought' during 8 to 18 July, having fallen from nests in Newcastle-Gateshead. The charity was to feed and care for them ready for release.
- 21) Nest failure at Newcastle quayside buildings, excluding Guildhall, was 23.1 % (24 nests failed).
- 22) Newcastle quayside buildings: the productivity and nest failure percentage figures have mostly been bracketed (in Table 1) due to the small number of nests (i.e. small sample size) involved.
- 23) Additional surveys were undertaken at International Paints / Akzo Nobel by Kathy Evans (see Table 7); all other surveys reported here were performed by the author.

Part Two: Individual Tables

Table 2. Tyne Bridge north abutment, 2017

Aspect	AON 5 June 2017	Chick clutches 12-13 July 2017	Chicks total	Productivity Chicks / AON	% of failed nests
North	89	38 x 1, 17 x 2	72	0.81	38.2 %
South	132	67 x 1, 24 x 2, 1 x 3	118	0.89	30.3 %
East	77	46 x 1, 11 x 2	68	0.88	26.0 %
West	77	37 x 1, 17 x 2, 1 x 3	74	0.96	28.6 %
Total	375	188 x 1, 69 x 2, 2 x 3	332	0.89	30.9 %

Notes, Tyne Bridge north abutment.

- On 5 June, two additional trace nests on East aspect, also two on South aspect, one on North aspect and one on West aspect,
- On 5 June, one small chick on North aspect; on West aspect one nest with two small chicks,
- On 12 July, one adult sitting on nest (E), one adult sitting on nest (S): eggs not hatched?
- On 12 July, one small chick (South aspect), i.e. a late chick coming through,
- On 13 July, two small chicks (West aspect), i.e. late chicks coming through,
- During 12-13 July, all other N abutment chicks seen were quite well advanced,
- On 13 July, three adults sitting tight at nests (E), four adults also sitting (W): eggs not hatchd?
- On 13 July, one dead chick seen in a nest (West aspect)

Table 3. Tyne Bridge south abutment, 2017

Aspect	AON 3 June 2017	Chick clutches 11 July 2017	Chicks total	Productivity Chicks / AON	% of failed nests
North	74	41 x 1, 27 x 2	95	1.28	8.1 %
South	17	11 x 1, 4 x 2	19	1.12	11.8 %
East	71	24 x 1, 16 x 2	56	0.79	43.7 %
West	19	7x1, 4x2, 1x3	18	0.95	36.8 %
Total	181	83x1, 51x2, 1x3	188	1.04	25.4 %

Notes, Tyne Bridge south abutment.

- On 3 June, 3 small chicks on North aspect and 3 on East aspect: i.e. early ones
- On 3 June, one additional trace nest on West aspect,
- On 11 July, one free-flying juvenile (East aspect), plus one more around S abutment,
- On 11 July, four small chicks (West aspect), all other S abutment chicks quite well advanced,
- On 11 July, one adult sitting (E), one adult sitting (W): eggs not hatched yet?

Table 4. Saltmeadows Tower (Gateshead), 2017

Aspect	AON 2 June 2017	Chick clutches 11 July 2017	Chicks total	Productivity Chicks / AON	% of failed nests
NE	49	26 x 1, 5 x 2	36	0.73	36.7 %
NW	47	17 x 1, 11 x 2	39	0.83	40.4 %
S	19	9 x 1	9	0.47	52.6 %
Total	115	52 x 1, 16 x 2	84	0.73	40.9 %

Notes, Saltmeadows Tower.

- On 2 June, one pair of adults was mating, NW aspect,
- On 2 June, one dead adult was hanging from base of NE aspect, looked to be caught by angler's line, reported to Peter Shield (Gateshead Council) via Helen Quayle (TKP Chair),
- On 11 July, single adults were sitting (no chicks seen) at two nests, NW aspect,
- On 11 July, two very small chicks on S aspect; all other tower chicks quite well advanced,
- On 11 July, no fledged juveniles in attendance,
- On 11 July, one carrion crow present on top ledge at SW corner.

Table 5. Baltic Arts Centre (Gateshead), 2017

Aspect	AON 2 June 2017	Chick clutches 11 July 2017	Chicks total	Productivity Chicks / AON	% of failed nests
North 1	78	46 x 1, 27 x 2	100	1.28	6.4 %
North 2	24; +5 (windows)	17 x 1, 8 x 2	33	1.14	13.8 %
North 3	3	1 x 1	1	(0.33)	(66 %)
East	9	4 x 1, 1 x 2	6	(0.67)	(44.4 %)
Total	119	68 x 1, 36 x 2	140	1.18	12.6 %

Notes, BFM.

North 1: main ledge under 'Baltic Flour Mills' lettering

North 2: ledge above 'Baltic Flour Mills' lettering, and on assoc. window ledges

North 3: below viewing platform (level 4, facing east)

On 2 June 2017, there were:

- also 3 trace nests on East aspect,
- also 7 trace nests on North 2 aspect,
- 1 x 1 small chick on North 2 aspect and two small chicks on North 1 aspect.

On 11 July 2017, there were:

- two quite small chicks on North 1 aspect, i.e. late chicks coming through,
- four quite small chicks on North 2 aspect and one adult sitting tight at another nest,
- one small chick on East aspect and one adult sitting well at another nest,
- all other chicks recorded were observed to be much more advanced,
- one adult sitting at a nest on North 3 aspect,
- five free-flying juveniles around the Baltic North aspects.

Table 6. Akzo Nobel (Felling Shore), 2017 (K. Evans & D M Turner data)

Aspect	AON 1 June 2017	Chick clutches 7 July 2017	Chicks total	Productivity Chicks / AON	% of failed nests
1	27	7 x 1, 13 x 2	33	1.22	25.9 %
2	12	5 x 1, 3 x 2	11	0.92	33.3 %
3	65	34 x 1, 23 x 2	80	1.23	12.3 %
4	71	25 x 1, 32 x 2	89	1.25	19.7 %
5	18	9 x 1, 7 x 2	23	1.28	11.1 %
Total	193	80 x 1, 78 x 2	236	1.22	18.1 %

Notes.

Aspect 1 Long low ledge to the right (west)

Aspect 2 Next middle ledge to left (east) of Aspect 1

Aspect 3 Concentrated old central section (i.e. moving east)

Aspect 4 Five windows and long low ledge to left (east) of Aspect 3

Aspect 5 Windows back from river, higher, left and right of 'Akzo Nobel' lettering

- 7 July, no free-flying juveniles seen
- New ledges at west end of site: no kittiwakes were seen to use these ledges this season.

Table 7. Akzo Nobel (Felling Shore), 2017 (K. Evans data), showing nestling development

Aspect	Chicks in nest 28 June	Chicks in nest 14 July	Chicks in nest 21 July	Chicks in nest 29 July
1	29	21	18	14
2	16	9	7	5
3	73	94	46	21
4	78	81	76	31
5	16	22	18	15
Total	212	227	165	86
Summary	84 x 1, 64 x 2	(65x1, 81x2)	(107 x 1, 29 x 2)	(78 x 1, 4 x 2)

Notes.

Free flying juveniles noted: 0 (28 June), 7 (14 July), 22 (21 July), 15 (29 July)

Table 8. Tynemouth cliffs, 2017

Aspect	AON 11 June 2017	Chick clutches 14 July 2017	Chicks total	Productivity Chicks / AON	% of failed nests
1	124	45 x 1, 38 x 2, 1 x 3	124	1.0	32.2 %
2	87	49 x 1, 27 x 2, 1 x 3	106	1.22	11.5 %
3	44	23 x 1, 19 x 2	61	1.39	4.5 %
4	77	35 x 1, 22 x 2	79	1.03	26.0 %
Total	332	152 x 1, 106 x 2, 2 x 3	370	1.11	21.7 %

Notes, Tynemouth cliffs.

- Aspect 1 Tynemouth north pier steps to arch 1, plus arches 1 – 13
- Aspect 2 To right of arch 13 up to artificial gap
- Aspect 3 From artificial gap to corner
- Aspect 4 From corner towards King Edward's Bay, fairly straight section.

On 11 June 2017:

- there were four trace nests,
- there was 1 x 1 visible chick,
- at Aspect 4: there were 41 aon up to the short wall and 36 aon beyond it.

On 14 July 2017:

- no free-flying juveniles were present,
- nine chicks were quite small, i.e. late ones coming through,
- four adults were still sitting tight (i.e. no chicks seen at these nests),
- one dead chick was seen at a nest in Aspect 1 (in arch 10).

Aspects 2 and 3 (i.e. those longest populated) produced higher productivity and lower nest failure than aspects 1 and 4 (i.e. those more recently populated aspects).

Part Three: Dunstanburgh Castle (Comparative data)

Table 9. Dunstanburgh Castle cliffs, 2012 – 2017 (Surveys completed by the author)

Year	AON	Chick clutches	Chicks total	Productivity Chicks / AON	% of failed nests
2012	309 (5 June)	113 x 1, 107 x 2, 2 x 3 (10 July)	344	1.11	28.2 %
2013	198 (15 June)	53x1, 31x2, 1x3 (23 July)	118	0.60	57.1 %
2014	346 (8 June)	157x1, 85x2 (15 July)	327	0.95	30.1 %
2015	336 (15 June)	116x1, 113x2, 1x3 (14 July)	345	1.03	31.5 %
2016	211 (11 & 26 June)	64x1, 38x2, 1x3 (19 July)	143	0.68	51.2 %
2017	449 (14 June)	165 x 1 , 152 x 2, 3 x 3 (19 July)	478	1.06	28.7 %

Notes, Dunstanburgh Castle cliffs.

- At main part of site, two AON counts were made on 14 June 2017, resulting in totals of 412 and 427, so a mid-value of 419 AON was selected; these nests produced chicks (19 July) as follows: 159 x 1, 137 x 2 and 3 x 3; i.e. a productivity of 1.05 and nest failure of 28.6 %
- At the south gully there were 30 AON on 14 June 2017; these nests produced chicks (19 July) as follows: 6 x 1 and 15 x 2; i.e. a productivity of 1.20 and nest failure of 30 %
- 19 July 2017, no free-flying juveniles were seen.

Other Notes

Quotes from Coulson (2011) ...

- a) 'The incubation period of the kittiwake averages about 27 days from the time that the egg is laid, but it can vary up to two days in individual cases.' (page 87);
- b) 'Kittiwake chicks are at least 36 days old before they can sustain flight. In most cases, chick leave the nest sometime after day 36 ...' (page 106).

Coulson (2017) reached the conclusion (page 87) that during 1985-2015 '... 0.8 fledglings per pair were needed to maintain the size of Kittiwake colonies.' In this study Coulson referenced data from twelve British sites during 1985-2000 and from fifteen sites during 2000-2015.

In comparison to that figure (0.8 fledglings per pair), annual breeding productivity for the river Tyne during 2013-2017 was, in rising year order: 0.76, 0.91, 0.93, 0.81, 1.01 (Turner 2014, 2015, 2016).

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