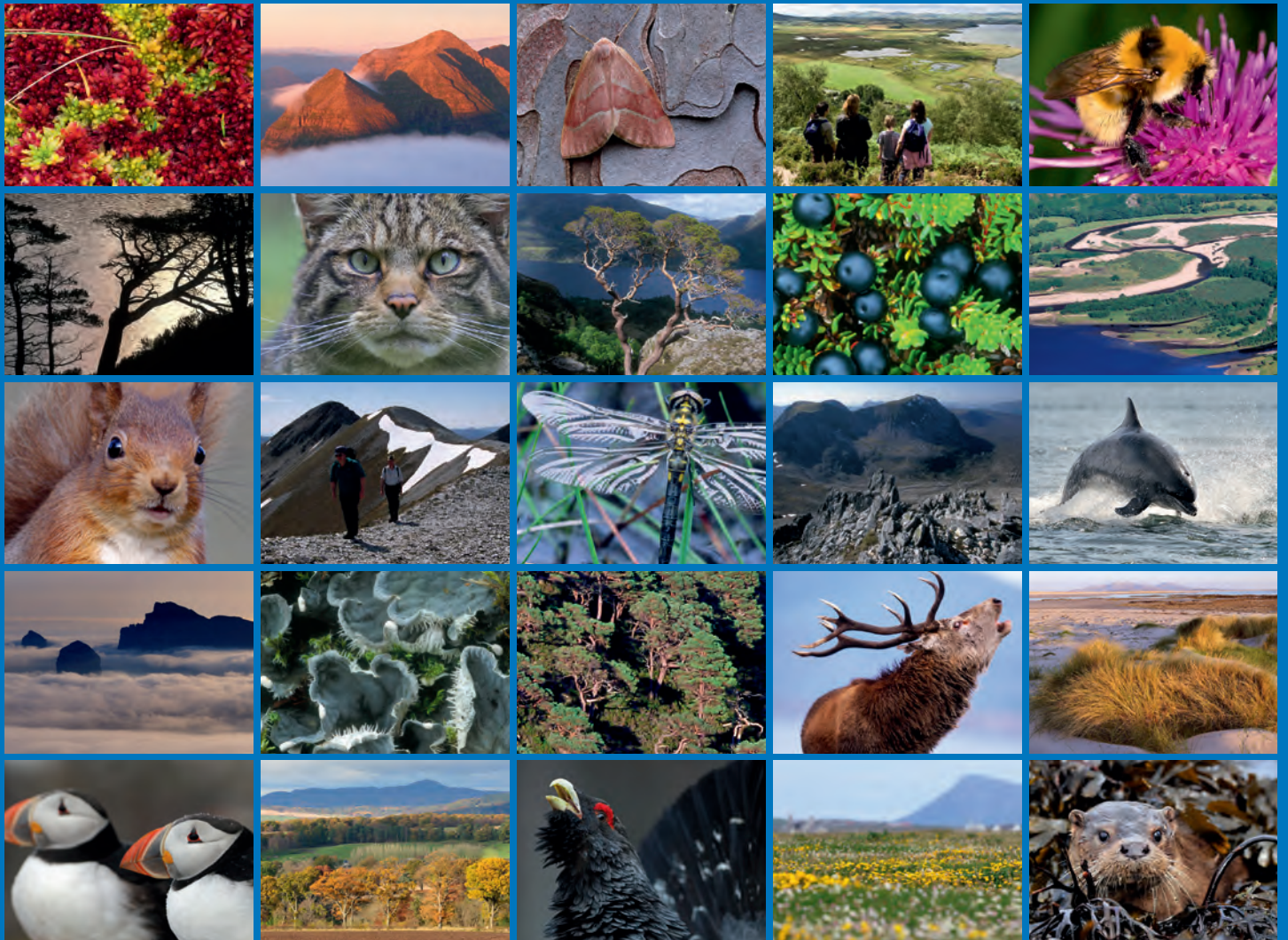


Marine Protected Area - related black guillemot surveys 2014





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COMMISSIONED REPORT

Commissioned Report No. 792

Marine Protected Area - related black guillemot surveys 2014

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COMMISSIONED REPORT

Summary

Marine Protected Area – related black guillemot surveys 2014

Commissioned Report No. 792

Project No: 15115

Contractor: Bob Swann, North of Scotland Ornithological Services

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Marine Protected Areas; MPA; black guillemots; East Caithness Cliffs; Clyde Sea Sill; Sanda; tysties.

Background

In order to obtain information to support work on Marine Protected Areas (MPAs), black guillemots were surveyed at two sites in Scotland, East Caithness Cliffs and Clyde Sea Sill MPAs, from late March to April 2014. The data from these counts was then compared with counts collected in a similar manner for Seabird 2000.

Main findings

- 1,589 birds were counted in the East Caithness Cliffs MPA. Of these 1,569 birds were in summer plumage, this was a 67% increase on the 939 counted in the same sections for Seabird 2000.
- On Sanda only 232 birds were counted, all in summer plumage, much lower than the 406 reported for Seabird 2000 and lower than the 339 counted in 2013.

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The counts were undertaken by S. Foster, K. Graham, R. Morton, N. Scriven, R. Swann and S. Ward.

1. INTRODUCTION

MPA (Marine Protected Area) search features, including 21 habitats, 15 species and five large-scale features have been used to underpin the identification of Nature Conservation MPAs in Scotland's seas. Black guillemots (*Cepphus grylle*) are the only bird species included. The MPAs will assist in the conservation of black guillemot feeding and breeding areas. Black guillemots are at the southern edge of their global range in Scotland, being more typically found into Arctic areas and they are not specifically protected under the EC Birds Directive as a qualifying species.

Black guillemots are a resident seabird, breeding around much of Scotland's coastline. Surveys of black guillemot differ considerably in timing and methodology from other seabirds and as such there is little up-to-date contextual information on their numbers around Scotland. To help determine trends in the current population Scottish Natural Heritage commissioned surveys for black guillemot (*Cepphus grylle*) in six locations around Scotland in spring 2013 and 2014. This information will be used to support work on developing the management of the MPAs. Around Scotland there are 30 MPAs, of which black guillemot is a protected feature on six of these.

The sites chosen for survey work in spring 2014 were:

- East Caithness Cliffs (MPA)
- Monach Isles (MPA), Western Isles
- Sanda Island within the Clyde Sea Sill (MPA)

Figure 1 shows the distribution of the MPAs for black guillemots in Scotland.



Figure 1. Marine Protected Areas for black guillemots around Scotland.

2. METHODS

The methods outlined in the Seabird Monitoring Handbook (Walsh *et al.*, 1995) were employed. These were identical methods to previous Black Guillemot surveys undertaken for Seabird 2000.

The handbook suggests that counts should be made in the pre-laying period - ideally the first three weeks of April in most of the range, although counts in late March and late April are acceptable. Counts should be made in the early morning, from first light to c. two hours later (c. 0600-0800 BST). Winds should not be stronger than Beaufort scale Force 4, and preferably not blowing onshore. Sea-swell should be slight to moderate. Counts may be made from the sea or from the land. The use of boats is preferable for high cliffs, offshore islands or long stretches of coast with little or scattered suitable breeding habitat.

All birds seen on the sea within c. 300 m of the shore and any on land, were counted and divided into the following categories:

- a) birds in adult summer plumage;
- b) birds in other plumages (largely or partly grey, or with dark bars visible in white wing-patch);

In addition any birds seen >300 m offshore were counted separately, as were feeding birds (as they are less obviously associated with breeding habitat).

For each group of birds their location was either noted on a map or recorded using GPS. Weather and sea conditions were noted as was the time of starting and completing each section of coast.

All counts were undertaken using the same sections as used in previous counts to ensure data were comparable.

2.1 East Caithness Cliffs

Surveys were undertaken over three mornings between 26th March and 15th April (Table 1), by three surveyors, all with previous experience of counting black guillemots. The methodology followed that established by JNCC (Walsh *et al.*, 1995) and outlined in SNH's *Statement of Requirements*. All counts were done from the sea using the Geo Explorer RIB, hired from Caithness Seacoasts Ltd., Wick. On all visits three observers counted, one scanning the cliffs, one the sea between the cliffs and the boat and one from the boat out to sea. In addition the skipper of the boat, also helped pinpoint birds on the sea.

When a group of birds were located, they were slowly approached to get an accurate count. If disturbed, birds were followed to ensure no double counting occurred. In all it took six hours 35 minutes to survey the entire coast. This approximated to 8.5km per hour of survey work.

Table 1. Count sections, date and time of counts.

| Site | Date | Time start | Time end | Sea state | Swell | Weather |
|-------------------------|------------|------------|----------|-----------|-------|------------------------|
| Helmsdale-Ceann Leathad | 26/03/2014 | 0630 | 0832 | moderate | none | dry, 2/8 cloud, NE2 |
| Wick Bay-Hill Head | 14/04/2014 | 0600 | 0833 | slight | none | showers, 3/8 cloud NW3 |
| Invershore- Scredan | 15/04/2014 | 0605 | 0805 | calm | none | dry, 0/8 cloud, S2 |

It should be noted that the majority of counts were undertaken during the ideal period between dawn and two hours after dawn, though three hours after is acceptable. On 26th March five sections were counted between 0830 and 0915 just outside the recommended period. These five sections were recounted on 15th April. The weather and sea conditions during the April counts were ideal. On the late March count the sea state was slight to moderate so it is possible that some birds may have been missed, resulting in a potential undercount (see discussion).

Details of all count sections are given in Annex 1.

2.2 The Monach Islands, Western Isles

An early count of the islands revealed lower than expected numbers and a high percentage still in winter plumage. Poor weather prevented a follow up visit during the ideal counting window.

2.3 Sanda Island

The island was surveyed, using a boat chartered from Mull of Kintyre Seatours. The survey was done in ideal conditions on 11th April 2014 between 0700 and 0900. There was a light force one wind, good visibility, dry, cloud 6/8 and only a slight swell. Sanda was counted between 0700 and 0800, Glunimore 0800-0830 and Sheep Island 0830-0900.

3. RESULTS

This section gives details of the number of birds counted in 2014 and then compares these with similar surveys undertaken for Seabird 2000 conducted in April 1999 or April 2000.

3.1 2014 Counts

Details are given of the counts of adult and birds in immature plumage in the two counted areas.

3.1.1 East Caithness Cliffs

A total of 1,569 individuals in breeding plumage were counted, plus 20 birds in immature plumage and none >300m from the shore (Annex 2). No feeding birds were counted. Details of numbers counted in the different count sections are given in Table 2. Details of count sections, including start and end points, survey dates and times are given in Annex 1.

Table 2. Numbers according to count sub-sections East Caithness Cliffs

| Section no | Section | Adult birds | Immature birds |
|--------------|-----------------------------|--------------|----------------|
| 1452 | Helmsdale to Ord | 0 | |
| 1453 | Ord to Ceann Dusdale | 36 | |
| 278 | Badbea | 92 | 1 |
| 280 | Cnoc na Croiche | 0 | |
| 282 | Inver Hill | 0 | |
| 283 | Poll Gallon | 16 | |
| 279 | Berriedale to Ceann Leathad | 108 | |
| 285 | Screadan | 120 | 2 |
| 284 | Rockhead | 84 | |
| 277 | Badaidh na Gaoithe | 84 | |
| 286 | Sithean Dubh | 46 | |
| 281 | Dunbeath Bay | 73 | 4 |
| 257 | Cleit Bheag | 20 | |
| 261 | Gotters Dubh | 69 | 1 |
| 267 | Latheronwheel | 37 | 1 |
| 259 | Forse Head | 31 | 1 |
| 256 | Burrigill | 26 | |
| 265 | Invershore | 7 | |
| 264 | Hill Head | 203 | 1 |
| 268 | Occumster | 14 | |
| 270 | Roy Geo/Skerry Mor | 51 | 2 |
| 269 | Overton | 28 | |
| 262 | Halberry Head/Ness Castle | 107 | 3 |
| 274 | Whaligoe 1 | 26 | |
| 275 | Whaligoe 2 | 32 | 2 |
| 272 | Stack of Ulbster | 51 | 1 |
| 260 | Gearly Head | 43 | |
| 271 | Sarplet Head | 8 | |
| 258 | Corbiegoe | 43 | |
| 266 | Ires Geo | 24 | 1 |
| 263 | Helman Head | 35 | |
| 273 | The Brough | 54 | |
| 276 | Wick Bay | 1 | |
| Total | | 1,569 | 20 |

Note that all birds counted were within the limits of the MPA.

The distribution of birds within the East Caithness Cliffs MPA is shown in Figure 2.

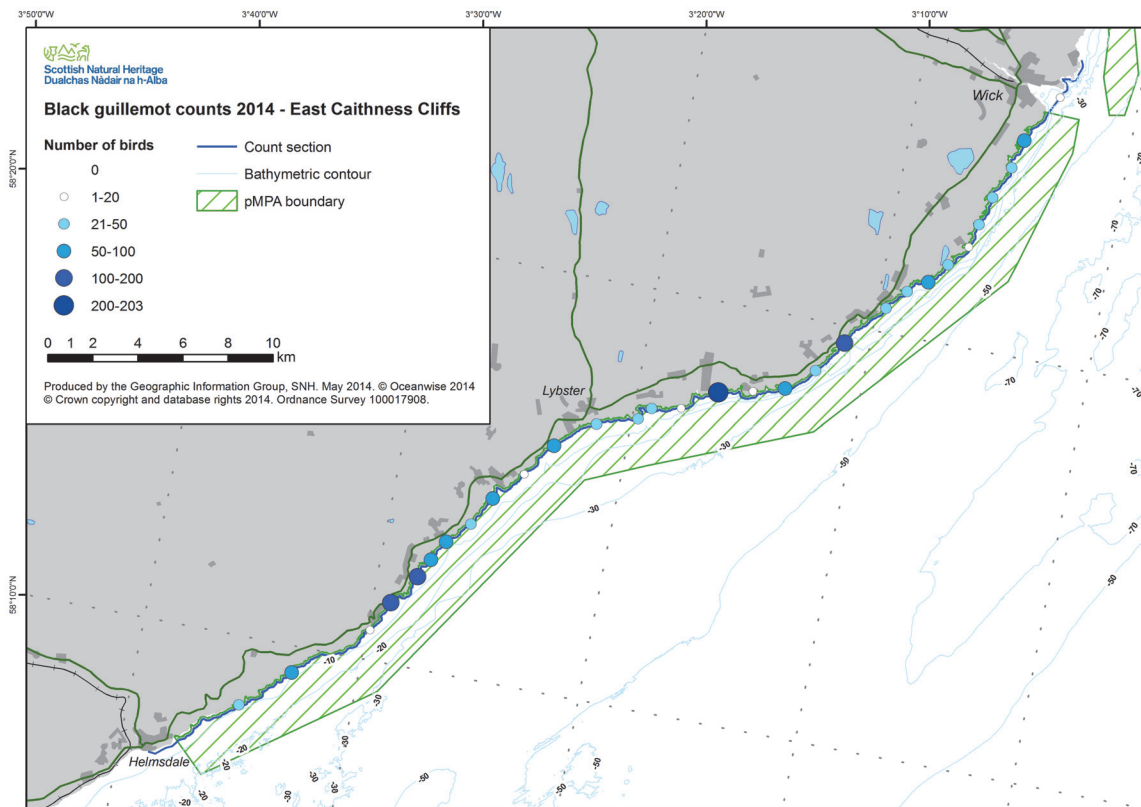


Figure 2. East Caithness 2014 Counts

3.1.2 Sanda Island

A total of 232 birds were counted, all were within 300m of the shore and all were in summer plumage. No feeding birds were counted. The island was split into three sections for these counts (Table 3). A breakdown of the Sanda count is given in Annex 2.

Table 3. Numbers according to count sections on Sanda

| Site | Date | Grid Ref start | Grid ref end | No in summer plumage | No immatures |
|--------------|------------|----------------|--------------|----------------------|--------------|
| Sanda | 11/04/2013 | NR725049 | NR732048 | 192 | 0 |
| Glunimore | 11/04/2013 | NR741050 | NR741050 | 0 | 0 |
| Sheep Island | 11/04/2013 | NR732053 | NR731057 | 40 | 0 |

The distribution of birds round Sanda is shown in Figure 3.

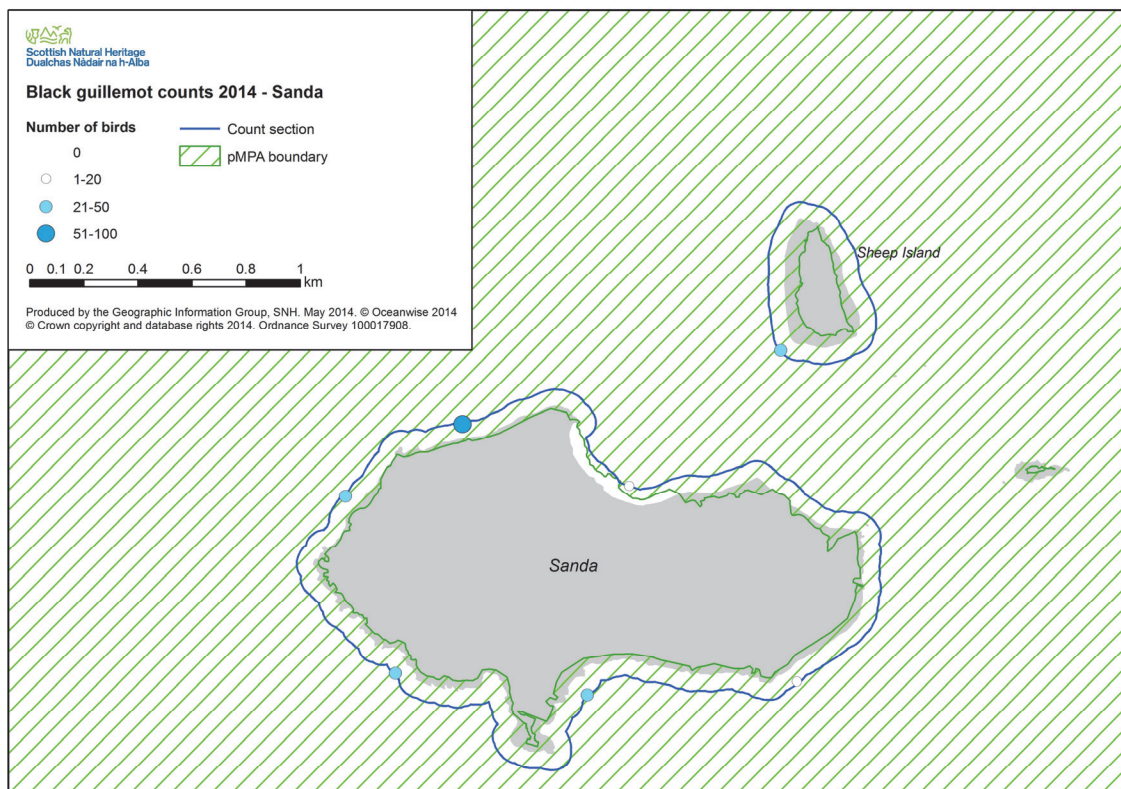


Figure 3. Sanda 2014 Counts

3.2 Comparison of 2014 counts with Seabird 2000 counts

This section compares the counts undertaken in 2014 with those done in April 1999 or April 2000 as part of the Seabird 2000 project. The figures compare the number of birds in summer plumage within 300m of the shore.

3.2.1 East Caithness Cliffs

Table 4 gives details of number of birds counted in each section in 2014 compared to that counted in 2000.

Table 4. Comparison between 2000 and 2014 East Caithness Cliffs counts, by section.

| Official section no | Section | 2000 | 2014 |
|---------------------|-----------------------------|------|------|
| 1452 | Helmsdale to Ord | 0 | 0 |
| 1453 | Ord to Ceann Dusdale | 49 | 36 |
| 278 | Badbea | 93 | 92 |
| 280 | Cnoc na Croiche | 13 | 0 |
| 282 | Inver Hill | 10 | 0 |
| 283 | Poll Gallon | 15 | 16 |
| 279 | Berriedale to Ceann Leathad | 73 | 108 |
| 285 | Screadan | 102 | 120 |
| 284 | Rockhead | 0 | 84 |
| 277 | Badaidh na Gaoithe | 50 | 84 |
| 286 | Sithean Dubh | 49 | 46 |
| 281 | Dunbeath Bay | 37 | 73 |
| 257 | Cleit Bheag | 29 | 20 |
| 261 | Gotters Dubh | 55 | 69 |

4. DISCUSSION

Full counts, comparable with the Seabird 2000 data were obtained from two of the sites.

4.1 Comparisons with Seabird 2000 data

Very different trends are shown between the two surveyed areas and possible reasons for these differences are discussed.

4.1.1 East Caithness Cliffs

A total of 1,569 individuals in breeding plumage were counted in 2014, compared to 939 counted in 2000. It should be noted that the majority of counts were undertaken during the ideal period between dawn and two hours after dawn. A few counts did continue beyond this.

On the 26th March five counts were undertaken just outwith the ideal survey period. On this occasion 204 birds were counted. When these sections were recounted within the desired period on 15th April 429 adults were counted, an increase of 110%. It is difficult to be sure what factors contributed to the undercount on the March visit. There are four possibilities. Firstly the fact the count was done (just) outside the recommended two hours after dawn counting period – so birds may have started to disperse out to feed. Secondly the slight-moderate sea state meant we were missing birds, thirdly that not all birds were present at the colony in late March or finally that there can be much morning to morning variability in Black Guillemot numbers in the pre breeding period (Andy Douse *pers com*).

Looking at the sections only counted in April there were 1,317 adults compared to 686 in these sections in 2000, a 92% increase. On the seven sections only counted in late March there were 252 birds compared with 253 counted in 2000 (in mid-April). Had there been a 92% increase on these sections we might have expected 485 birds. This means the 2014 count for East Caithness Cliffs of 1,569 individuals may be under recorded by about 230 birds.

4.1.2 Sanda

The count of 232 was considerably lower than the 406 birds counted for Seabird 2000. It was also much lower than the 339 (-32%) counted in 2013. Two possibilities have been suggested for this decline. Apparently there can be much morning to morning variability in Black Guillemot numbers in the pre breeding period (Andy Douse *pers com*) and this decline would be within the range of this variability. However, the fact that numbers have declined over two successive springs may suggest other factors are involved. Volunteers from Sanda Island Bird Observatory observed mink predation in auk colonies in 2012 (R.Morton *pers com*). If these have continued they could be responsible for the observed decline.

5. CONCLUSIONS

This work showed that there appears to have been a large increase in the number of Black Guillemots at the East Caithness Cliffs MPA since the Seabird 2000 counts. This mirrors increases found on Papa Westray, parts of North Caithness and on Rum in 2013 (Swann 2013). The situation on Sanda is very different, where the decline recorded in 2013 appears to have continued.

6. REFERENCES

Swann, R. 2013. Marine Protected Areas and Marine Renewable - related black guillemot surveys. *Scottish Natural Heritage Commissioned Report No. 612*.

Walsh, P.M., Halley, D.J., Harris, M.P., del Nivo, A., Sim, I.M.W. & Tasker, M.L. 1995. *Seabird monitoring handbook for Britain and Ireland*. JNCC/RSPB/ITE/Seabird Group, Peterborough.

ANNEX 1: EAST CAITHNESS CLIFFS SECTION DETAILS

| Site no | Site | Date | Grid ref start | Grid ref end | Time start | Time finish | Counted from | Observers |
|---------|-----------------------------|------------|----------------|--------------|------------|-------------|--------------|-------------|
| 1452 | Helmsdale to Ord | 26/03/2014 | ND031151 | ND059173 | 06:30 | 06:50 | sea | RLS, KG, SW |
| 1453 | Ord to Ceann Dusdale | 26/03/2014 | ND059173 | ND076185 | 06:50 | 07:20 | sea | RLS, KG, SW |
| 278 | Badbea | 26/03/2014 | ND076185 | ND102207 | 07:20 | 07:50 | sea | RLS, KG, SW |
| 280 | Cnoc na Croiche | 26/03/2014 | ND102207 | ND108208 | 07:50 | 07:55 | sea | RLS, KG, SW |
| 282 | Inver Hill | 26/03/2014 | ND108208 | ND117218 | 07:55 | 08:00 | sea | RLS, KG, SW |
| 283 | Poll Gallon | 26/03/2014 | ND117218 | ND120225 | 08:00 | 08:10 | sea | RLS, KG, SW |
| 279 | Berriedale to Ceann Leathad | 26/03/2014 | ND120225 | ND134241 | 08:10 | 08:30 | sea | RLS, KG, SW |
| 285 | Screadan | 15/04/2014 | ND134241 | ND138254 | 07:48 | 08:05 | sea | RLS, KG, SF |
| 284 | Rockhead | 15/04/2014 | ND138254 | ND141260 | 07:44 | 07:48 | sea | RLS, KG, SF |
| 277 | Badaidh na Gaoithe | 15/04/2014 | ND141260 | ND151270 | 07:34 | 07:44 | sea | RLS, KG, SF |
| 286 | Sithean Dubh | 15/04/2014 | ND151270 | ND158280 | 07:27 | 07:34 | sea | RLS, KG, SF |
| 281 | Dunbeath Bay | 15/04/2014 | ND158280 | ND168293 | 07:24 | 07:27 | sea | RLS, KG, SF |
| 257 | Cleit Bheag | 15/04/2014 | ND168293 | ND181309 | 07:01 | 07:24 | sea | RLS, KG, SF |
| 261 | Gotters Dubh | 15/04/2014 | ND181309 | ND191321 | 06:50 | 07:01 | sea | RLS, KG, SF |
| 267 | Latheronwheel | 15/04/2014 | ND191321 | ND216333 | 06:29 | 06:50 | sea | RLS, KG, SF |
| 259 | Forse Head | 15/04/2014 | ND216333 | ND221337 | 06:18 | 06:29 | sea | RLS, KG, SF |
| 256 | Burrigill | 15/04/2014 | ND221337 | ND231340 | 06:13 | 06:18 | sea | RLS, KG, SF |
| 265 | Invershore | 15/04/2014 | ND231340 | ND244348 | 06:05 | 06:13 | sea | RLS, KG, SF |
| 264 | Hill Head | 14/04/2014 | ND244348 | ND264353 | 08:20 | 08:33 | sea | RLS, KG, SF |
| 268 | Occumster | 14/04/2014 | ND264353 | ND274354 | 08:12 | 08:20 | sea | RLS, KG, SF |
| 270 | Roy Geo/Skerry Mor | 14/04/2014 | ND274354 | ND291363 | 08:00 | 08:12 | sea | RLS, KG, SF |
| 269 | Overton | 14/04/2014 | ND291363 | ND297371 | 07:58 | 08:00 | sea | RLS, KG, SF |
| 262 | Halberry Head/Ness Castle | 14/04/2014 | ND297371 | ND311394 | 07:30 | 07:58 | sea | RLS, KG, SF |
| 274 | Whaligoe 1 | 14/04/2014 | ND314394 | ND325405 | 07:22 | 07:30 | sea | RLS, KG, SF |
| 275 | Whaligoe 2 | 14/04/2014 | ND325405 | ND331413 | 07:15 | 07:22 | sea | RLS, KG, SF |
| 272 | Stack of Ulbster | 14/04/2014 | ND331413 | ND342419 | 07:05 | 07:15 | sea | RLS, KG, SF |
| 260 | Gearthy Head | 14/04/2014 | ND342419 | ND348428 | 06:56 | 07:05 | sea | RLS, KG, SF |
| 271 | Sarilet Head | 14/04/2014 | ND348428 | ND354436 | 06:53 | 06:56 | sea | RLS, KG, SF |
| 258 | Corbiegoe | 14/04/2014 | ND354436 | ND359450 | 06:45 | 06:53 | sea | RLS, KG, SF |
| 266 | Ires Geo | 14/04/2014 | ND359450 | ND362463 | 06:30 | 06:45 | sea | RLS, KG, SF |
| 263 | Helman Head | 14/04/2014 | ND362463 | ND367478 | 06:20 | 06:30 | sea | RLS, KG, SF |
| 273 | The Brough | 14/04/2014 | ND367478 | ND371489 | 06:08 | 06:20 | sea | RLS, KG, SF |
| 276 | Wick Bay | 14/04/2014 | ND371489 | ND388523 | 06:00 | 06:08 | sea | RLS, KG, SF |

ANNEX 2: EAST CAITHNESS CLIFFS COUNT DETAILS

| Date | Gps | No. Sp birds | No. Wp birds | Section no. | | | | | |
|------------|----------|--------------|--------------|-------------|-------------|----------|----|----|----|
| 26/03/2014 | ND067176 | 6 | | 2 | | | | | |
| 26/03/2014 | ND066174 | 6 | | 2 | | | | | |
| 26/03/2014 | ND072179 | 24 | | 2 | | | | | |
| 26/03/2014 | ND077184 | 9 | | 3 | | | | | |
| 26/03/2014 | ND080187 | 1 | | 3 | | | | | |
| 26/03/2014 | ND088194 | 7 | | 3 | | | | | |
| 26/03/2014 | ND090196 | 18 | | 3 | | | | | |
| 26/03/2014 | ND091198 | 10 | | 3 | | | | | |
| 26/03/2014 | ND093198 | 13 | | 3 | | | | | |
| 26/03/2014 | ND094200 | 14 | | 3 | | | | | |
| 26/03/2014 | ND098202 | 0 | 1 | 3 | | | | | |
| 26/03/2014 | ND100203 | 20 | | 3 | | | | | |
| 26/03/2014 | ND119217 | 16 | | 6 | | | | | |
| 26/03/2014 | ND122223 | 3 | | 7 | | | | | |
| 26/03/2014 | ND123226 | 10 | | 7 | | | | | |
| 26/03/2014 | ND125229 | 8 | | 7 | | | | | |
| 26/03/2014 | ND126230 | 22 | | 7 | | | | | |
| 26/03/2014 | ND126232 | 41 | | 7 | | | | | |
| 26/03/2014 | ND127233 | 21 | | 7 | | | | | |
| 26/03/2014 | ND130235 | 3 | | 7 | | | | | |
| 26/03/2014 | ND133237 | 1 | | 8 | | | | | |
| | | | | | Early count | | | | |
| 15/04/2014 | ND137245 | 60 | 2 | 8 | 26/03/2014 | ND135244 | 20 | 8 | |
| 15/04/2014 | ND138249 | 59 | | 8 | 26/03/2014 | ND137248 | 10 | 8 | |
| 15/04/2014 | ND139251 | 67 | | 9 | 26/03/2014 | ND137250 | 8 | 8 | |
| 15/04/2014 | ND141254 | 17 | | 9 | 26/03/2014 | ND138251 | 34 | 8 | |
| 15/04/2014 | ND145260 | 27 | | 10 | 26/03/2014 | ND140254 | 12 | 9 | |
| 15/04/2014 | ND146262 | 27 | | 10 | 26/03/2014 | ND142259 | 6 | 10 | |
| 15/04/2014 | ND148264 | 21 | | 10 | 26/03/2014 | ND144261 | 12 | 1 | 10 |
| 15/04/2014 | ND150266 | 9 | | 10 | 26/03/2014 | ND145262 | 24 | 10 | |
| 15/04/2014 | ND153270 | 21 | | 11 | 26/03/2014 | ND146263 | 18 | 10 | |
| 15/04/2014 | ND155273 | 25 | | 11 | 26/03/2014 | ND149266 | 4 | 10 | |
| 15/04/2014 | ND158277 | 21 | 2 | 12 | 26/03/2014 | ND152270 | 2 | 11 | |
| 15/04/2014 | ND160281 | 52 | 2 | 12 | 26/03/2014 | ND153271 | 19 | 11 | |
| 14/04/2014 | ND375490 | 1 | | 33 | 26/03/2014 | ND157276 | 9 | 11 | |
| 14/04/2014 | ND371485 | 20 | | 32 | 26/03/2014 | ND158278 | 13 | 11 | |
| 14/04/2014 | ND368481 | 2 | | 32 | 26/03/2014 | ND159281 | 13 | 12 | |
| 14/04/2014 | ND353479 | 32 | | 32 | | | | | |
| 14/04/2014 | ND366475 | 20 | | 31 | | | | | |
| 14/04/2014 | ND366469 | 5 | | 31 | | | | | |
| 14/04/2014 | ND365467 | 10 | | 31 | | | | | |
| 14/04/2014 | ND362461 | 11 | | 30 | | | | | |
| 14/04/2014 | ND358451 | 13 | 1 | 30 | | | | | |
| 14/04/2014 | ND354444 | 36 | | 29 | | | | | |
| 14/04/2014 | ND355442 | 3 | | 29 | | | | | |
| 14/04/2014 | ND355438 | 4 | | 29 | | | | | |
| 14/04/2014 | ND353433 | 8 | | 28 | | | | | |
| 14/04/2014 | ND351427 | 4 | | 27 | | | | | |
| 14/04/2014 | ND348425 | 8 | | 27 | | | | | |
| 14/04/2014 | ND346422 | 4 | | 27 | | | | | |
| 14/04/2014 | ND344420 | 27 | | 27 | | | | | |
| 14/04/2014 | ND342417 | 5 | | 26 | | | | | |

| | | | | | |
|------------|----------|------|----|----|-----|
| 14/04/2014 | ND341416 | 25 | | 26 | |
| 14/04/2014 | ND336413 | 21 | 1 | 26 | |
| 14/04/2014 | ND332412 | 10 | 2 | 25 | |
| 14/04/2014 | ND330411 | 6 | | 25 | |
| 14/04/2014 | ND329408 | 10 | | 25 | |
| 14/04/2014 | ND327405 | 6 | | 25 | |
| 14/04/2014 | ND324402 | 9 | | 24 | |
| 14/04/2014 | ND321400 | 13 | | 24 | |
| 14/04/2014 | ND320397 | 4 | | 24 | |
| 14/04/2014 | ND310387 | 7 | | 23 | |
| 14/04/2014 | ND308386 | 38 | 1 | 23 | |
| 14/04/2014 | ND307382 | 35 | | 23 | |
| 14/04/2014 | ND305380 | 6 | 2 | 23 | |
| 14/04/2014 | ND303377 | 12 | | 23 | |
| 14/04/2014 | ND300374 | 9 | | 23 | |
| 14/04/2014 | ND299370 | 2 | | 22 | |
| 14/04/2014 | ND296368 | 8 | | 22 | |
| 14/04/2014 | ND294365 | 18 | | 22 | |
| 14/04/2014 | ND290360 | 4 | | 21 | |
| 14/04/2014 | ND283357 | 9 | 1 | 21 | |
| 14/04/2014 | ND281356 | 18 | | 21 | |
| 14/04/2014 | ND277354 | 20 | 1 | 21 | |
| 14/04/2014 | ND275353 | 14 | | 20 | |
| 14/04/2014 | ND275351 | 89 | | 19 | |
| 14/04/2014 | ND267348 | 12 | | 19 | |
| 14/04/2014 | ND265349 | 24 | 1 | 19 | |
| 14/04/2014 | ND256350 | 44 | | 19 | |
| 14/04/2014 | ND249347 | 34 | | 19 | |
| 15/04/2014 | ND244343 | 7 | | 18 | |
| 15/04/2014 | ND237339 | 18 | | 17 | |
| 15/04/2014 | ND233337 | 8 | | 17 | |
| 15/04/2014 | ND229336 | 10 | | 16 | |
| 15/04/2014 | ND224335 | 21 | 1 | 16 | |
| 15/04/2014 | ND219331 | 4 | | 15 | 281 |
| 15/04/2014 | ND214330 | 4 | | 15 | |
| 15/04/2014 | ND194321 | 29 | 1 | 15 | |
| 15/04/2014 | ND191318 | 21 | 1 | 14 | |
| 15/04/2014 | ND189316 | 25 | | 14 | |
| 15/04/2014 | ND186315 | 23 | | 14 | |
| 15/04/2014 | ND180306 | 11 | | 13 | |
| 15/04/2014 | ND177302 | 4 | | 13 | |
| 15/04/2014 | ND170292 | 5 | | 13 | |
| | | 1569 | 20 | | |

ANNEX 3: SANDA SECTION DETAILS

| Section | Description | No. of Birds |
|----------------------|-------------------------|---------------------|
| NR732049 to NR724049 | Sanda Bay | 20 |
| NR724049 to NR718047 | Pier to auk colony | 60 |
| NR718047 to NR716043 | Auk colony to corner | 40 |
| NR716043 to NR726037 | Corner to lighthouse | 28 |
| NR726037 to NR729041 | Lighthouse Bay | 26 |
| NR729041 to NR737047 | Razorbill colony | 18 |
| NR737047 to NR732049 | Razorbill colony to Bay | 0 |

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