



2016-17 WINTER BIRD CROPS REPORT



National
Trust Jersey



States
of Jersey

2016-17 Winter Bird Crops report

Cristina Sellarés de Pedro
Birds On The Edge

Jersey
November 2017

Photo credits:

Romano da Costa: Skylark, Meadow Pipit, Starling, Song Thrush, Fieldfare, Redwing, Greenfinch, Goldfinch, Brambling and Chaffinch.

Tony Wright: Linnet, Greenfinch, Reed Bunting and Stonechat.

All photos of fields and crops by Cristina Sellarés de Pedro.

Cover photo of a Linnet by Tony Wright.

The maps on this document are copyright of The States of Jersey and have been produced in association with Digimap Ltd.

Birds On The Edge is a partnership of Durrell Wildlife Conservation Trust, States of Jersey Department of the Environment and the National Trust for Jersey.

SUMMARY

In 2016 a total of 52 fields were planted with crops to feed the birds in winter, 47 of them with tailored mixes designed to provide a variety of seeds and grains (known as 'winter bird crops'). The fields were located at 14 sites across the Island and covered a total of 41.1ha (228vg). The largest site was 8.6ha and comprised thirteen fields, and the smallest site was 0.81ha with only one field.

The development of the crops was monitored by taking height measurements and photographs once a month between July 2016 and April 2017. Bird abundance and activity were recorded with visual surveys carried out twice per month. The results were compared to data obtained during the previous winters and tested against an unplanted control site.

In order to optimize crop development for the benefit to the birds, farmers were advised to plant between mid-May and July, following the seed producer guidelines. The maximum growth achieved by a crop was 207cm, the highest since the scheme started in 2013, although the average maximum between crops was similar to previous winters (130cm).

A total of 52,134 birds were recorded of 56 different species were collected over fifteen surveys, of which 45,720 (87.7%) were of target species. A total of 14 target species were recorded at the crops, the five most abundant being Chaffinch (46.5%), Starling (16.5%), Linnet (12.8%), Goldfinch (8.8%) and Reed Bunting (1.7%). The most successful site had an average density of 491.8 birds/ha, whilst the least successful attracted 10.1birds/ha. In comparison, the control site had an average density of 0.06birds/ha. Even though net numbers increased by 3,550 compared to 2015-16 (9% increase) the actual overall density dropped by -14%. This was the first winter where bird numbers did not increase from the previous year.

ACKNOWLEDGEMENTS

Many people have been involved in this project, from planting the first fields more than a decade ago to offering land and suggesting new areas for planting, as well as funding surveys or paying for their own seed, sharing their expertise and proof-reading this report. My deepest gratitude goes to Charles Alluto, Steven Baudains, Ian Le Brun, David Buxton, Paul Carre, Elizabeth Corry, Mick Dryden, Glen Kehoe, Matthew Lamy, Richard Le Cornu, Tim Liddiard, Philip Le Maistre, Tony Paintin, Jon Parkes, John Pinel and Glyn Young.

The seed to plant the winter bird crops was purchased with a generous grant from Action For Wildlife Jersey and the States of Jersey Countryside Enhancement Scheme, which also funded the implementation and monitoring of the crops.

CONTENTS

Summary	2
Acknowledgements	3
Contents	4
List of tables, figures and photos	7
1. INTRODUCTION	9
1.1 The Birds On The Edge winter bird crops	9
1.2 Results of the 2015-16 winter bird crops	10
1.3 Aims of the 2016-17 winter bird crop scheme	12
1.4 Report outline	13
1.5 Target species	14
2. STUDY AREA AND METHODS	16
2.1 Study area	16
2.2 Methods	17
2.2.1 Crop management and development	17
2.2.2 Bird abundance and distribution	17
2.2.2.1 Data collection	17
2.2.2.2 Data analysis	19
3. RESULTS: CROPS AND BIRDS	20
3.1 Crop management and development	20
3.1.1 Results	20
3.1.2 Discussion	21
3.1.3 Conclusions	22
3.2 Bird abundance, species and distribution	23
3.2.1 Results	23
3.2.2 Discussion	29
3.2.3 Conclusions	30
4. RESULTS: PER SITE	31
4.1 SOREL	31
4.1.1 Description	31
4.1.2 Crops	31
4.1.3 Birds	32
4.1.4 Discussion	34
4.1.5 Recommendations	34
4.2 CRABBÉ	35
4.2.1 Description	35
4.2.2 Crops	35
4.2.3 Birds	35
4.2.4 Discussion	37
4.2.5 Recommendations	37
4.3 CÂTEL	38
4.3.1 Description	38
4.3.2 Crops	38
4.3.3 Birds	38
4.3.4 Discussion	39
4.3.5 Recommendations	40

4.4 LES LANDES	41
4.4.1 Description	41
4.4.2 Crops	41
4.4.3 Birds	41
4.4.4 Discussion	43
4.4.5 Recommendations	43
4.5 POND	44
4.5.1 Description	44
4.5.2 Crops	44
4.5.3 Birds	44
4.5.4 Discussion	46
4.5.5 Recommendations	47
4.6 ST BRELADE	48
4.6.1 Description	48
4.6.2 Crops	48
4.6.3 Birds	48
4.6.4 Discussion	50
4.6.5 Recommendations	50
4.7 LA COUPE	51
4.7.1 Description	51
4.7.2 Crops	51
4.7.3 Birds	51
4.7.4 Discussion	52
4.7.5 Recommendations	53
4.8 SANDPITS	54
4.8.1 Description	54
4.8.2 Crops	54
4.8.3 Birds	54
4.8.4 Discussion	56
4.8.5 Recommendations	56
4.9 GROUVILLE	57
4.9.1 Description	57
4.9.2 Crops	57
4.9.3 Birds	58
4.9.4 Discussion	59
4.9.5 Recommendations	59
4.10 LA ROCQUE	60
4.10.1 Description	60
4.10.2 Crops	60
4.10.3 Birds	61
4.10.5 Discussion	62
4.10.4 Recommendations	62
4.11 LES CREUX	63
4.11.1 Description	63
4.11.2 Crops	63
4.11.3 Birds	64
4.11.4 Discussion	65
4.11.5 Recommendations	65

4.12 HOUGUE BIE	66
4.12.1 Description	66
4.12.2 Crops	66
4.12.3 Birds	66
4.12.4 Discussion	68
4.12.5 Recommendations	68
4.13 FLICQUET	69
4.13.1 Description	69
4.13.2 Crops	69
4.13.3 Birds	69
4.13.4 Discussion	71
4.13.5 Recommendations	71
4.14 QUEEN'S VALLEY	72
4.14.1 Description	72
4.14.2 Crops	72
4.14.3 Birds	72
4.14.4 Discussion	74
4.14.5 Recommendation	74
5. FINAL CONCLUSIONS AND RECOMMENDATIONS	75
5.1 Conclusions	75
5.2 Recommendations	75
REFERENCES	76
APPENDICES	77
I. Common and scientific names of species	77

List of tables, figures and photos

Figure 1 Species abundance at the winter bird crops in 2015-16	10
Figure 2 Abundance of target birds at the WBC sites in 2013-14, 2014-15 and 2015-16	11
Figure 3 Conservation sites with winter bird crops during winter 2016-17 (in blue) and discontinued from previous years (in red)	16
Figure 4 Example of survey sheet with field observations	18
Figure 5 Crop heights at each individual field (in cm)	20
Figure 6 Abundance of target birds at the WBC sites in 2013-14, 2014-15, 2015-16 and 2016-17	23
Figure 7 Species abundance at the winter bird crops	25
Figure 8 Distribution of target species at all the sites over the winter 2016-17	28
Figure 9 Distribution of target species (stacked) at the sites over the winter 2016-17	28
Figure 10 Abundance of target species at Sorel during winter 2016-17	33
Figure 11 Abundance of target species at Crabbé during winter 2016-17	36
Figure 12 Abundance of target species at Câtél during winter 2016-17	39
Figure 13 Abundance of target species at Les Landes during winter 2016-17	42
Figure 14 Abundance of target species at the Pond during winter 2016-17	46
Figure 15 Abundance of target species at St Brelade during winter 2016-17	49
Figure 16 Abundance of birds at La Coupe during winter 2016-17	52
Figure 17 Abundance of target species at the Sandpits during winter 2016-17	55
Figure 18 Abundance of target species at Grouville during winter 2016-17	58
Figure 19 Abundance of target species at La Rocque during winter 2016-17	61
Figure 20 Abundance of target species at Les Creux during winter 2016-17	65
Figure 21 Abundance of target species at Hougue Bie during winter 2016-17	67
Figure 22 Abundance of target species at Flicquet during winter 2016-17	70
Figure 23 Abundance of target species at Queen's Valley during winter 2016-17	73
Table 1 List of conservation sites with winter bird crops during winter 2016-17	17
Table 2 Most abundant species at the WBC sites	24
Table 3 (I and II) Presence of species at each site	26
Table 4 Bird density at the sites (highest to lowest) before removal of crops	27
Table 5 Results of T-tests between WBC sites and control	27
Table 6 Abundance of target species (in bold) recorded at Sorel	33
Table 7 Abundance of target species (in bold) recorded at Crabbé	36
Table 8 Abundance of target species (in bold) recorded at Câtél	39
Table 9 Abundance of target species (in bold) recorded at Les Landes	42
Table 10 Abundance of target species (in bold) recorded at Pond	45
Table 11 Abundance of target species (in bold) recorded at St Brelade	49
Table 12 Abundance of target species (in bold) recorded at La Coupe	52
Table 13 Abundance of target species (in bold) recorded at the Sandpits	55
Table 14 Abundance of target species (in bold) recorded at Grouville	58
Table 15 Abundance of target species (in bold) recorded at La Rocque	61
Table 16 Abundance of target species (in bold) recorded at Les Creux	64
Table 17 Abundance of target species (in bold) recorded at Hougue Bie	67
Table 18 Abundance of target species (in bold) recorded at Flicquet	70
Table 19 Abundance of target species (in bold) recorded at Queens Valley	73
Photos 1-4 Growth of fields planted at different times	20
Photos 5-6 A field planted mid-June in development (left) and drying out (right)	32
Photos 7-8 A field planted mid-July in development (left) and drying out (right)	32
Photos 9-10 The new field My317/318 in August (left) and October (right)	35

Photo 11 Field My95 in December	38
Photos 12-13 A field planted on 23 rd May (left) and drying up (November)	41
Photos 14-15 The new field P34 in October (left) and drying up (right) in December	44
Photos 16-17 Field B906 in July (left) and November (right)	48
Photos 18-19 The field developing in July and drying up in October	51
Photos 20-21 A field developing in July, and drying up in October	54
Photos 22-25 Field G219 in August, September, October and November (left to right)	57
Photos 26-29 Field G598 in August (top left) September (top right) October (bottom left) and November (bottom right)	60
Photos 30-33 Field G598 in August (top left) September (top right) October (bottom left) and November (bottom right)	64
Photos 34-37 Field S642 in August (top left) September (top right) and February (bottom left and right)	66
Photos 38-39 Field in August (left) and September (top right)	69
Photos 40-41 Strips of the field flailed on 28 th November 2016	69
Photos 42-43 Field G24B in August (left) and October (right)	72

1. INTRODUCTION

1.1 The Birds On The Edge winter bird crops

The Birds On The Edge partnership (BOTE) is a joint initiative between The National Trust for Jersey, Durrell Wildlife Conservation Trust and the States of Jersey Department of the Environment. BOTE's work aims to restore habitats, especially coastal and farmland, and to stop the decline of locally endangered bird species.

BOTE has been developing its Habitat Restoration Strategy since 2013 by means of surveying areas of Jersey and producing management recommendations to promote sustainable practices and habitat restoration. The surveys identify sites of conservation interest, whose habitats could be restored in order to increase their biodiversity. The reports also offer recommendations on techniques to restore and manage those habitats, such as hedge planting and long-term care, enhancement of boundaries, planting of wildlife crops, bracken and scrub management, and conservation grazing amongst others.

Jersey holds various populations of endangered birds, and those associated with farmland are showing the steepest declines – species such as the Skylark, Yellowhammer, Cirl Bunting, Linnet and Reed Bunting amongst others¹. This trend follows a pattern seen across the UK and Europe², and it is partly caused by high winter mortality associated with the modernization of farming techniques. The traditional sources of food in winter - spilt grain, fields left in stubble and fallow grounds where weeds developed- diminished with the intensification of production and the appearance of more efficient machinery.

The lack of winter food is being addressed in various countries with the help of European Union's agri-environment schemes (AESs), which in the UK are fulfilled via the Environmental Stewardship (ES) scheme³. The main strategy used to offset the lack of winter food is to plant specialized crops, comprised by energy- and nutrient-rich plants such as sunflower, quinoa and millet, the so-called 'winter bird crops' (WBCs).

In 2013 BOTE launched a trial farmland scheme⁴ in partnership with five local farmers to plant winter bird crops on their land. The seed for the crops was purchased with a private donation and the farmers planted the crops on their fields after the early potato harvest. Aside from providing a source of food in winter for resident and migrant birds, this scheme also aimed to monitor the development of these crops and their effectiveness in attracting birds, in relation to size of site, location and land management. Additional benefits of this scheme were the establishment of links with the farming community, in a partnership that defined the expansion of the scheme in future years. The scheme was repeated every year since, expanding in size and participation.

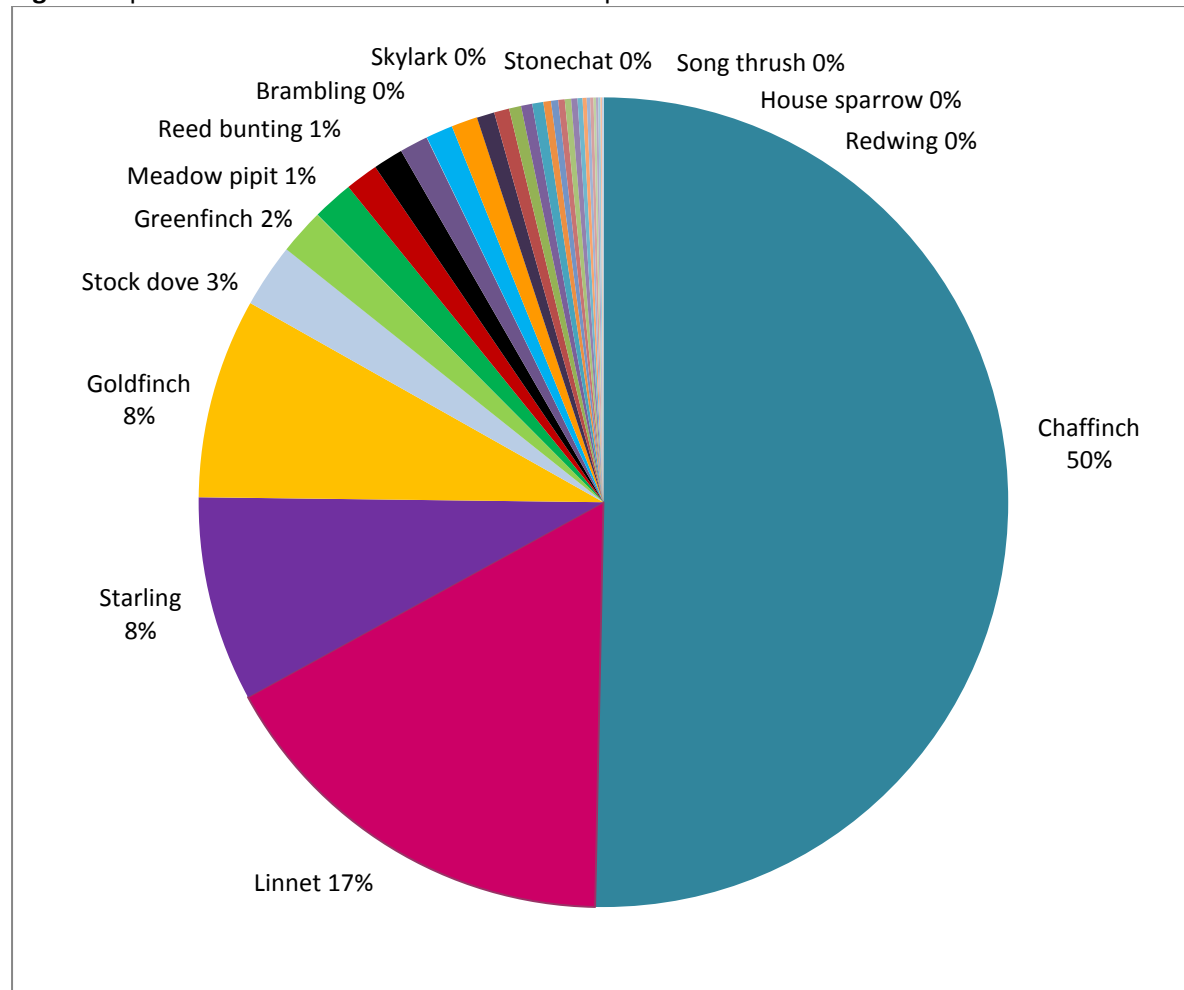
1.2 Results of the 2015-16 winter bird crops

A total of 45 fields were planted with WBCs at twelve different sites, with a combined area of 31.23ha (250vg). Measurements were taken of crop development and bird abundance.

The data was analysed and statistical tests were carried out between each site and a control site established in 2013.

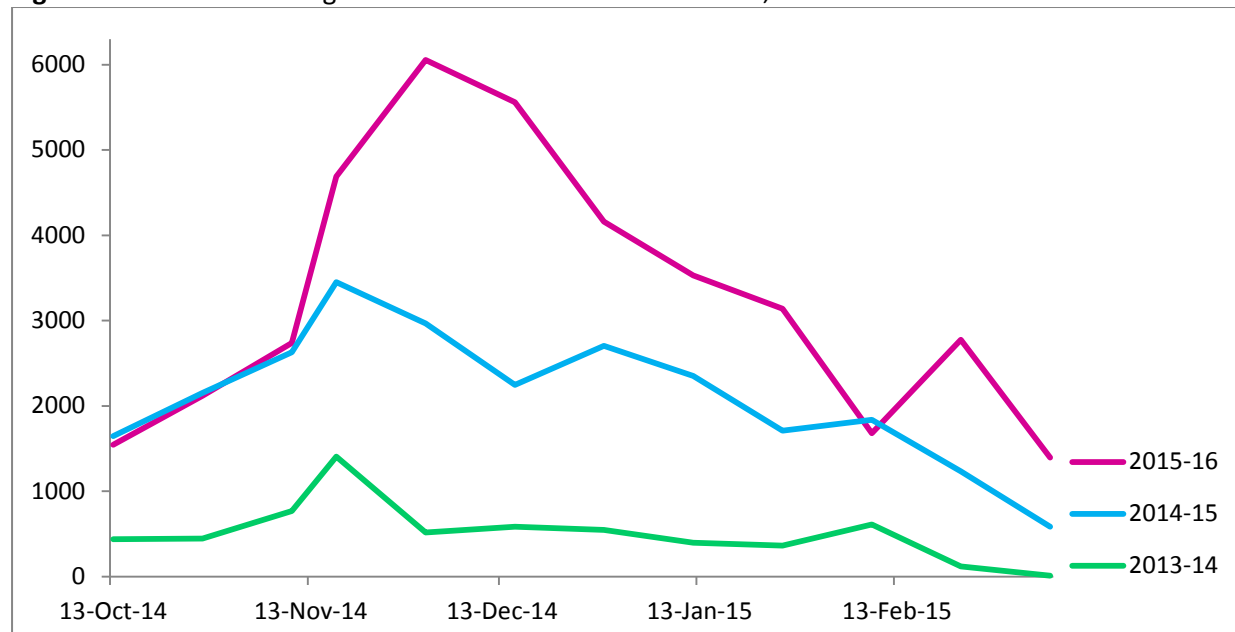
A total of 46,155 birds were recorded during the surveys, of which 40,949 (88.72%) belonged to target species. Seven out of the ten most abundant species were target species, including Chaffinch (50.2%), Linnet (16.65%) and Starling (8.14%)⁵.

Figure 1 Species abundance at the winter bird crops in 2015-16



The presence of birds on the crops peaked between the 2nd week of November and the 2nd week of December.

Figure 2 Abundance of target birds at the WBC sites in 2013-14, 2014-15 and 2015-16



In line with conclusions from previous years, the report from the 2015-16 Winter Bird Crop scheme concluded that:

- The fields were effective in providing food for target species during winter
- The density of birds had increased in relation to the previous winter
- A variety of locations, crops and management regimes could be advantageous for the scheme, as it would offer more flexibility in planning and crop choices, as well as staggering the ploughing of the fields at the end of winter.

1.3 Aims of the 2016-17 winter bird crops scheme

The effectiveness of WBCs in Jersey is measured by the numbers of farmland birds present at the WBC sites. The development of the crops is also measured in relation to planting dates* in order to provide better advice to farmers participating in this scheme.

The research aimed to describe the following:

- Crop growth in relation to planting dates
- Bird abundance and species using the WBCs
- Differences in bird abundance between WBCs sites
- Changes in bird presence at WBCs throughout the winter and especially in relation to site management (i.e. flailing or ploughing at the beginning of the potato season).

1.4 Report outline

The structure of this report is similar to the 2015-16 document. It refers to the clustered fields planted with WBCs as 'sites' and to target species as the birds that the WBCs are aimed at: farmland related or dependant species that are of conservation concern in the UK and Jersey. This year 14 different target species were recorded at the WBC sites: Linnet, Skylark, Reed Bunting, Meadow Pipit, Starling, Greenfinch, Chaffinch, Goldfinch, Brambling, House Sparrow, Stonechat, Song Thrush, Fieldfare and Redwing. Other species targeted by this project, but not recorded to date, include the Cirl Bunting and the Yellowhammer.

The present report is organized in a traditional layout of four blocks: introduction, methods, results and discussion. The 'Results' chapter is split in two sections: overall results for the project (crops and birds) and results per site. The evaluation of each site presents information on the management of the crops and a breakdown of bird species and abundance fluctuations throughout the winter, discussion of results and conclusions. The final chapter highlights the most relevant conclusions and recommendations for the scheme as it moves forward.

It is worth noting that three of the six original sites planted in 2013 are still being planted every year, therefore it would be possible to compare their results for the four-year period since the scheme started. Although the unplanted control site has not been surveyed since

* Kings Crops Seed Business Development Manager Mr Paul Brown (in litt.) "I think these are best planted between mid-May to early June. This will then give you seed right through the winter. Particularly Wildlife Winter Holding Cover that in Jersey could go into the 1st week of July. Wild Songbird Seed is an annual mix and is best sown in mid-May –earlier than WWHC."

the first winter of the scheme (2013-14), its results are still used to be tested against the performance of the various sites each winter.

1.5 Target species

Skylark

Jersey status: **Red**



Meadow Pipit

Jersey status: **Amber**



Common Starling

Jersey status: **Red**



Song Thrush

Jersey status: **Amber**



Fieldfare

Jersey status: **Unknown**



Redwing

Jersey status: **Green**



Common Stonechat

Jersey status: **Red**



Greenfinch

Jersey status: **Green**



Linnet

Jersey status: **Amber**



Goldfinch

Jersey status: **Green**



Brambling

Jersey status: **Green**



Chaffinch

Jersey status: **Green**



House Sparrow

Jersey status: **Amber**



Common Reed Bunting

Jersey status: **Red**



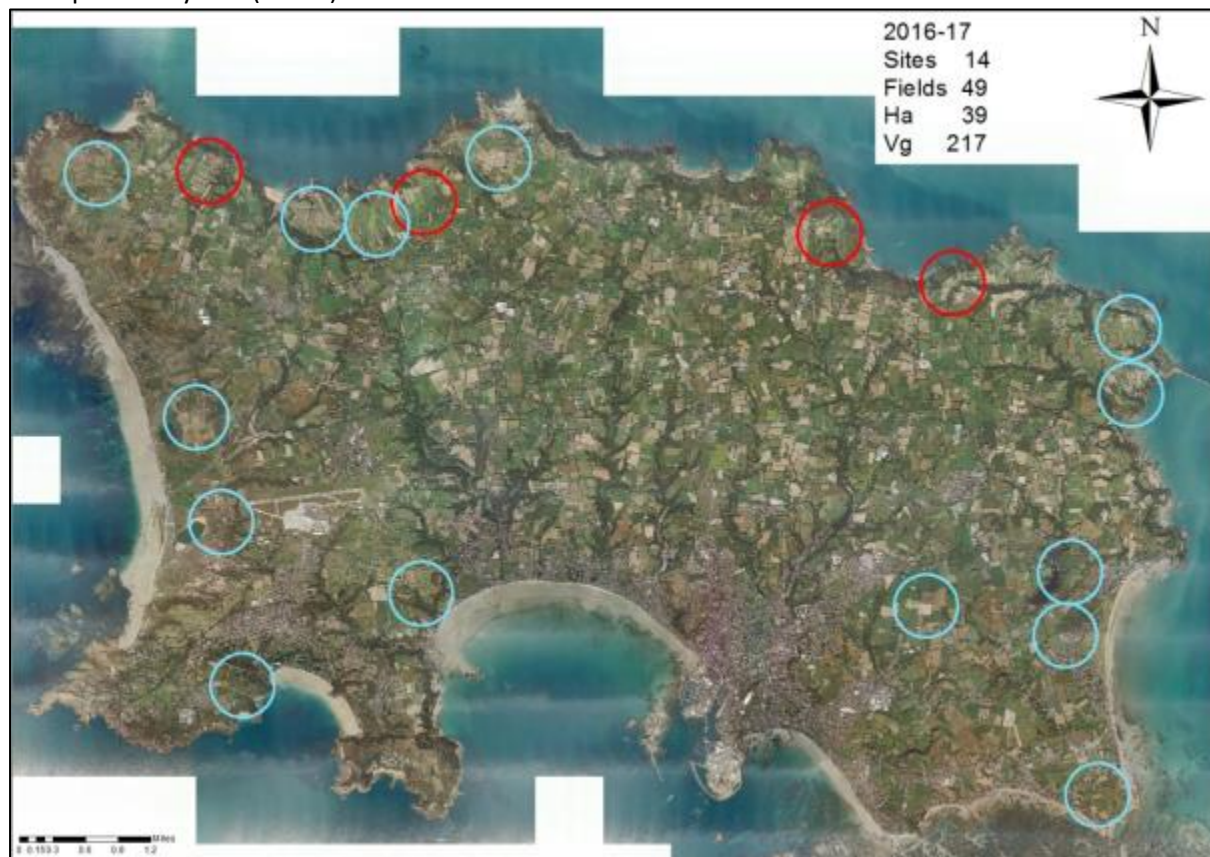
2. STUDY AREA AND METHODS

2.1 Study area

In 2016 a total of 52 fields with conservation crops at fourteen sites were monitored by Birds On the Edge. Of these, 47 fields had been planted with Winter Bird Crops and the remaining five had barley, mustard or solanum (prickly potato), which were also considered a resource for farmland birds (Figure 3). The total area covered by conservation crops was 41.07ha (228vg), of which 37.5 (208vg) were Winter Bird Crops.

The largest site (Sorel) comprised 13 fields and a total area of 8.61ha (47.8vg), whilst the smallest site (La Coupe) had just one field of 0.81ha (4.5vg) (Table 1).

Figure 3 Conservation sites with winter bird crops during winter 2016-17 (in blue) and discontinued from previous years (in red)



Where in previous years a different mixes of WBC have been planted in one same year, in 2016 only one mix of WBC was planted in all the fields due to economic constraints. The chosen crop contained suitable varieties of sunflower and mustard, camelina (gold-of-pleasure), red millet and white millet. Most of the fields were sown between the end of May and the second week of July.

Table 1 List of conservation sites with winter bird crops during winter 2016-17

Site Name	Parish	N Fields	Area (ha)	Area (vg)	N farmers
Sorel	St John	13	8.61	47.8	2
Crabbé	St Mary	5	4.26	23.7	2
Câtel	St Mary	2	1.62	9	1
Les Landes	St Ouen	3	2.72	15.1	2
Pond	St Ouen & St Peter	8	8.14	45.2	3
St Brelade	St Brelade	4	2.57	14.3	1
La Coupe	St Martin	1	0.81	4.5	1
Sandpits	St Brelade	3	2.35	13.1	1
Grouville	Grouville	2	1.36	7.56	1
La Rocque	Grouville	3	1.51	8.39	1
Les Creux	St Brelade	5	2.32	12.9	1
Hougue Bie	St Saviour	1	2.43	13.5	1
Flicquet	St Martin	1	1.27	7.06	1
Queen's Valley	Grouville	1	1.1	6.11	1
TOTALS	8 parishes	52	41	489	6

2.2 Methods

2.2.1 Crop management and development

Surveys of the crops started in June. Between June 2016 and March 2017 all 52 fields were checked; once per month between June and August and twice per month from September onwards, coinciding with the fortnightly bird surveys.

Photographs of each field and height measurements were collected on a monthly basis. The measurements were taken on randomly selected sunflowers located two metres into the crop. Measurements were collected until the crop had stopped growing vertically and most of the plants had begun to dry out. Information on the management of each field was also gathered, especially regarding the dates of planting, flailing and ploughing. Notes were taken regarding the development of each plant variety in the mix (whether the plants were at the flowering, seeding or drying stages).

2.2.2 Bird abundance and distribution

2.2.2.1 Data collection

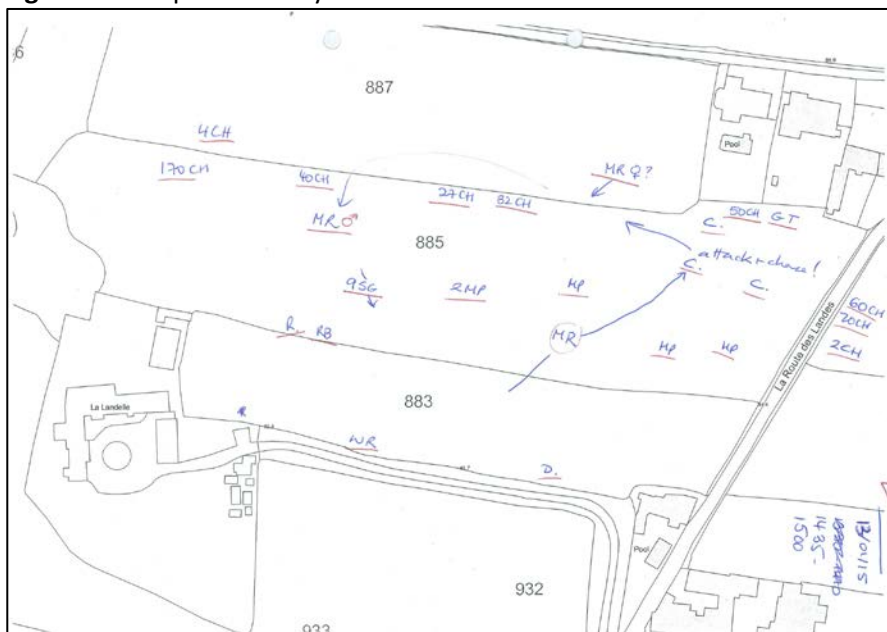
Each conservation site was treated as a survey unit, adding up the birds counted across all its fields. All sites were surveyed at least 15 times between September and March, on alternate weeks. The order in which the sites were surveyed was random, but all sites were surveyed within the same week. The surveys were carried out between one hour after sunrise and one hour before sunset, although most were completed before 12pm. Surveys

were limited to days with good visibility, and avoided periods of rain or strong winds (Force 7 or above).

The surveys aimed to estimate the number of birds at each site. The methodology used was an adaptation of the RSPB Volunteer & Farmer Alliance farmland surveys⁶ and the British Trust for Ornithology (BTO) Winter Bird Survey⁷, with aspects similar to Wilson *et al.*'s. 1996 study⁸. In order to keep observer error constant the surveys were carried out in the same way each time: each site was walked following an established route that crossed or followed all the boundaries of all the fields. The observer aimed to see, hear or flush all the birds present. The route was reversed every other survey to avoid observer bias in data recording and to minimize any effects of time of day on the presence and detectability of birds.

The data recorded included time and environmental conditions, bird species, abundance, location and activity. The observations were recorded directly onto a map of the area (Figure 4) using the abbreviated BTO species and activity codes, and later transferred to an Excel spreadsheet (see Appendices for BTO species codes).

Figure 4 Example of survey sheet with field observations



The observer took notes on all birds seen or heard. As stated in Wilson *et al.*⁸, “this method relies on the observer’s experience to assess when the count was complete, but it was considered to give more accuracy than a transect method or scan from the edge of the field because of the clumped distribution of many birds and great variation in the height of vegetation cover between fields. Moreover, it allowed counts of even the smaller passerines to be made.” The possibility of double-counting birds that were flushed between fields could not be completely eliminated, but the observer accounted for birds moving between fields and resting in hedges or nearby trees.

The species that were included in the records were all those found on the Working List of the Birds of the Channel Islands⁹ and migrants, except for any local species of seabird flying 50 meters or higher above the survey area.

2.2.2.2 Data analysis

The following data was calculated for each site:

- a) The sum of all birds observed and the sums of all birds of target species
- b) The density of target birds per site: on average, during the peak period, and the maximum recorded
- c) A series of two-tailed T-tests between the data from each site and the data from the 2013 control site.

3. RESULTS: CROPS AND BIRDS

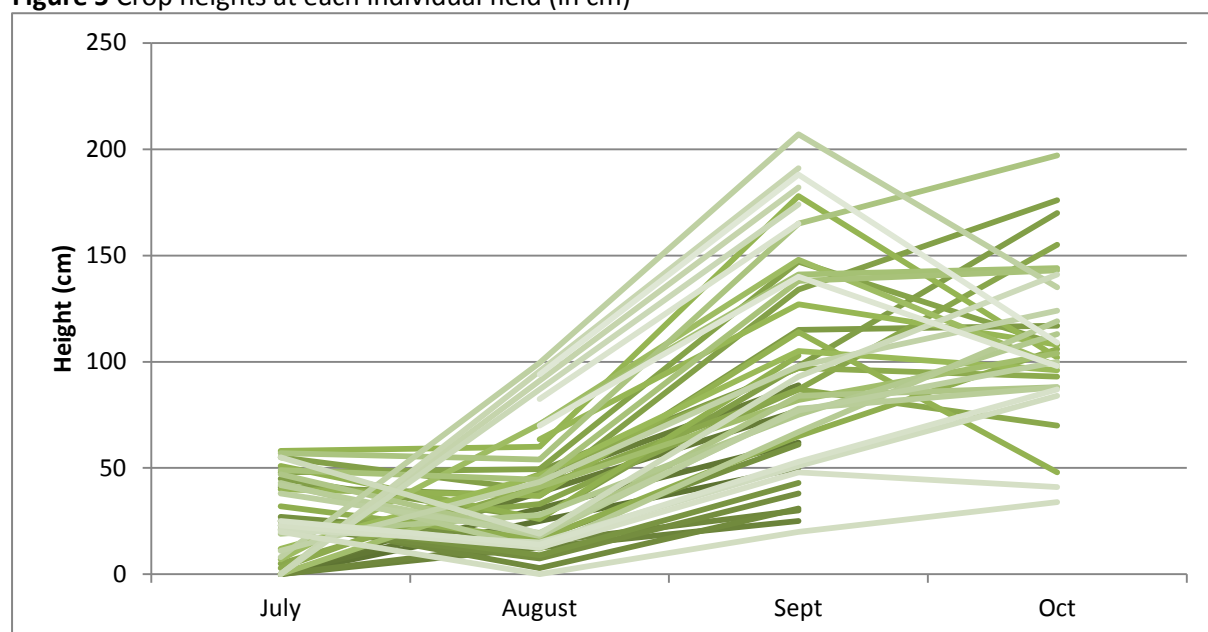
3.1 Crop management and development

3.1.1 Results

The maximum growth achieved by a crop was 207cm, slightly higher than the two previous years (180cm in 2014-15⁹ and 198cm in 2015-16⁵). The average maximum growth, 130cm, was similar to the two previous winters (132cm and 130cm). Twenty-eight fields reached their maximum height in September and the remaining nineteen reached it during the month of October.

Figure 5 represents the height samples taken at each field throughout the winter. The fields presented a larger range of maximum heights than in previous years, as well as higher disparity between plating time and maximum heights achieved.

Figure 5 Crop heights at each individual field (in cm)



Photos 1-4 Growth of fields planted at different times

Planted in early June

1 Month after sowing



Maximum growth



Planted in late July

1 Month after sowing



Maximum growth



3.1.2 Discussion

The majority of this season's crops developed within the expected timing and heights, which reached almost the same average maximum as the two previous years. A new overall maximum was reached this year at the same field in the site of Grouville as the previous winter. The gap between the first and last fields to be planted was of eight weeks, one less than the previous year and the smallest so far in the time that the scheme has been running.

During the first two years of this project a great variability in heights and seed development was observed, which was believed to be consequence of the disparity in the times of sowing - crops were planted as early as 25th April and as late as 1st August. In order to maximize the benefits of the crops for the birds, farmers were advised to plant within the timing guidelines provided by the seed producer which is between mid-May and July. The 2015-16 crops produced more uniform crops with consistently high growth and this was believed to be the result of better planting schedules and favourable weather during the spring.

In previous years there has been a marked difference between the growth and development of crops planted earlier rather than later in the spring. This trend did not appear in the crops planted in 2016, where fields that were planted at later dates such as early July did as well as those planted first (end of May – early June), presenting similar maximum heights and seed development. This interesting observation might be the result of poor development or slow growth on earlier fields caused by a spell of dry weather which affected the Island soon after the earliest fields had been planted, whereas later fields might have benefited from more favourable weather conditions (moderate rain) weeks after planting. This reinforces the view that a varied management with staggered planting, within an optimal timeframe, might reduce the chances of unfavourable weather affecting all the fields at once.

In reference to the previous year, field G219 adjacent to Grouville Marsh was again the tallest, most exuberant and with what appeared to be the largest sunflowers of the study. It is not known precisely why this was but it was most likely to be a combination of factors such as east-facing aspect, sowing date and weather at the time of sowing.

3.1.3 Conclusions

- All the fields in the scheme were sown with Winter Bird Crops within the recommended timeframe and developed flowers, seeds and grains successfully
- Earlier planted fields could have been negatively affected by a dry spell which happened shortly after planting, whereas fields planted later developed better; they might have benefited from more favourable weather conditions
- A staggered approach to planting times, between mid-May and mid-July, is likely to reduce the negative impact that bad weather might have on the growth of some WBCs.

3.2 Bird abundance, species and distribution

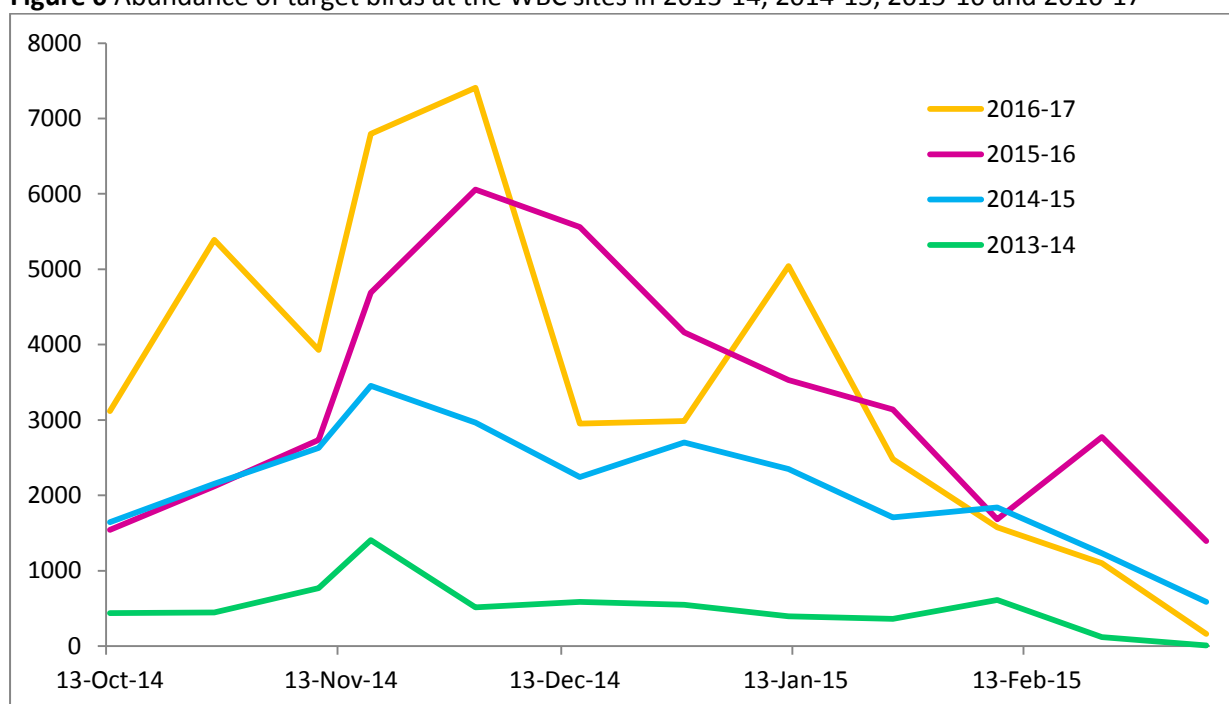
3.2.1 Results

Abundance

In relation to the previous three winters, net numbers of bird observations increased by 3,550 compared to the previous winter 2015-16 (a 9% increase), 17,424 compared to 2014-15 and by 36,727 compared to 2013-14. The average density across all sites was 115birds/ha, an increase of 107% from the first winter of the scheme (2013-14), 19.5% from the second winter (2014-15), and dropping by -14% in relation to 2015-16. These comparisons apply only to the density of target species as averaged for the 12 surveys each year.

Changes in abundance over the 2016-17 winter followed a similar pattern to the previous years (Figure 6). The net numbers of observations, added from all the sites, show similar peaks of abundance emerging mid-November, with numbers dropping after December and reaching their lowest towards the end of February. Unlike previous years, a steep decline in numbers was observed mid-December, followed by a second peak in numbers in mid-January.

Figure 6 Abundance of target birds at the WBC sites in 2013-14, 2014-15, 2015-16 and 2016-17



Species

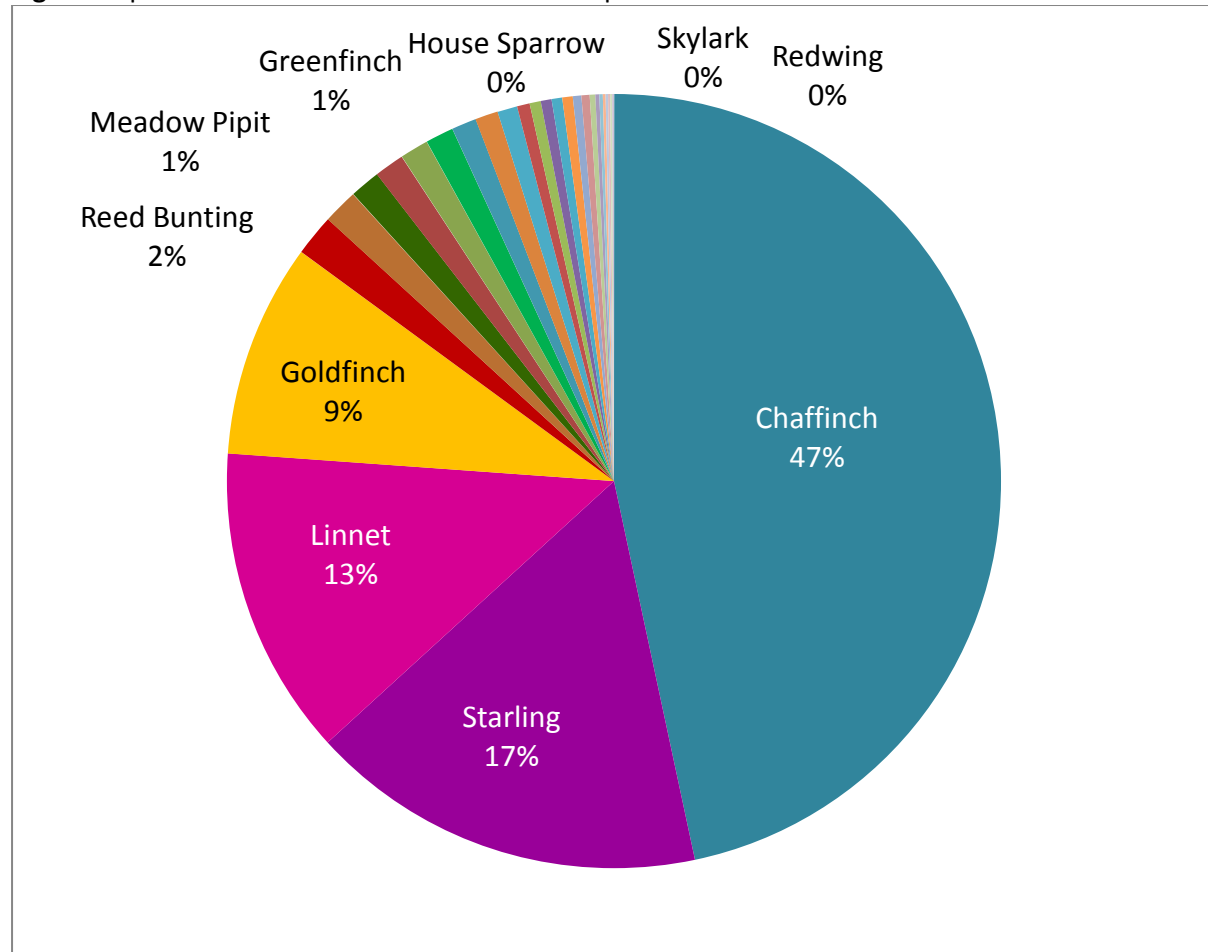
A total of 52,134 birds were recorded of 56 species over the course of the fifteen surveys, of which 45,720 (87.7%) were of target species. A total of 14 target species were recorded at the winter bird crops.

The most abundant species recorded was Chaffinch (46.4%), followed by Starling (16.6%) and Linnet (12.8%). Together with Goldfinch, Reed Bunting, Meadow Pipit and Greenfinch (all target species) were amongst the ten most abundant species observed (Table 2).

Table 2 Most abundant species at the WBC sites
(*Target species in bold*)

Ranking	Species	n	%
1	Chaffinch	24210	46.44
2	Starling	8595	16.5
3	Linnet	6705	12.86
4	Goldfinch	4631	8.88
5	Reed Bunting	897	1.72
6	Stock Dove	763	1.46
7	Meadow Pipit	656	1.26
8	Carrion Crow	651	1.25
9	Wood Pigeon	622	1.19
10	Greenfinch	608	1.17
Other target species present			
15	Song Thrush	242	0.46
17	Skylark	229	0.44
21	House Sparrow	121	0.23
23	Redwing	74	0.14
24	Stonechat	59	0.11
28	Brambling	38	0.07
43	Fieldfare	6	0.01

Figure 7 Species abundance at the winter bird crops



Distribution

In order to compare the number of target birds between sites, densities were calculated for the number of target birds to the crop area for each site, and for each survey. For a second year the site of La Rocque was the most successful in attracting the highest density of target birds, with 491.8 birds/ha on average before the fields were ploughed. Grouville, with 10.1 birds/ha was the least successful of all, but still significantly higher than the control site of 2013 which had 0.06 birds/ha. The average density across all sites was 115 birds/ha.

Table 3 (I and II) Presence of species at each site

	Sorel	Crabbé	Câtel	Landes	Pond	St Brelade	La Coupe
Stonechat	X		X		X		
Skylark	X	X	X	X	X		
Meadow Pipit	X	X	X	X	X		
Linnet	X	X	X	X	X	X	
Chaffinch	X	X	X	X	X	X	X
Goldfinch	X	X	X	X	X	X	X
Greenfinch	X	X		X	X	X	
Brambling				X			
Reed Bunting	X	X		X	X	X	
House Sparrow					X		
Starling	X	X	X	X	X		X
Song Thrush	X	X		X	X	X	X
Fieldfare							
Redwing	X			X		X	X

	Grouville	Sand pits	La Rocque	Flicquet	Hougue Bie	Les Creux	Queens Valley
Stonechat	X	X	X				
Skylark			X				
Meadow Pipit			X	X			
Linnet	X	X	X	X	X		X
Chaffinch	X	X	X	X	X	X	X
Goldfinch	X	X	X	X	X	X	X
Greenfinch	X	X	X	X			X
Brambling			X				
Reed Bunting	X		X				X
House Sparrow		X	X				
Starling		X	X	X	X		X
Song Thrush	X	X	X	X	X	X	X
Fieldfare			X			X	X
Redwing							X

Table 4 Bird density at the sites (highest to lowest) before removal of crops

Rank	Site	Average density (birds/ha)	Total n of target birds observed	N target species
1	La Rocque	491.81	10400	13
2	Queens Valley	240.98	3183	9
3	Les Landes	139.92	5936	11
4	St Brelade	126.26	2815	7
5	Crabbé	125.27	8020	9
6	Sandpits	103.88	2102	8
7	Flicquet	101.41	1993	7
8	La Coupe	78.7	511	5
9	Hougue Bie	66	2248	5
10	Pond	45.35	4433	11
11	Sorel	35.1	4104	11
12	Câtel	30.92	607	7
13	Les Creux	18.66	526	4
14	Grouville	10.13	193	7

A series of two-tailed paired T-tests were carried out between the mean of each site against the control site from 2013, which was not planted. Each test compared total numbers of target species on each of the 14 original surveys from 2013, with the assumption that the variance of the samples were equal to that of the control (Table 5).

Table 5 Results of T-tests between WBC sites and control

Ranking	Site	<i>p</i> -value
1	Landes	0.0001
2	Queens Valley	0.0012
3	Grouville	0.0015
4	Pond	0.0019
5	Crabbé	0.0025
6	La Rocque	0.0026
7	Sorel	0.0027
8	Sandpits	0.0052
9	St Brelade	0.0152
10	Hougue Bie	0.0153
11	Flicquet	0.0179
12	Les Creux	0.0432
13	La Coupe	0.0508
14	Câtel	0.1375

With a confidence of 95% (p -value < 0.05) the results of the T-tests indicated significant differences between most sites and the unplanted site, with the exception of two (La Coupe

and Câtel). Les Landes, Queens Valley, Grouville and St Ouen's Pond present the strongest difference towards the control site.

Like previous years, the abundance and distribution of birds fluctuated throughout the winter months. There were peaks in abundance, lasting between three and six weeks, usually between mid-October and mid-December. Some sites also had a second spike in numbers, albeit with fewer birds, between January and March.

Figures 8 and 9 represent the changes in abundance at the sites, as well as changes in bird abundance between the sites as the fields were flailed and ploughed in preparation for the potato crop.

Figure 8 Distribution of target species at all the sites over the winter 2016-17

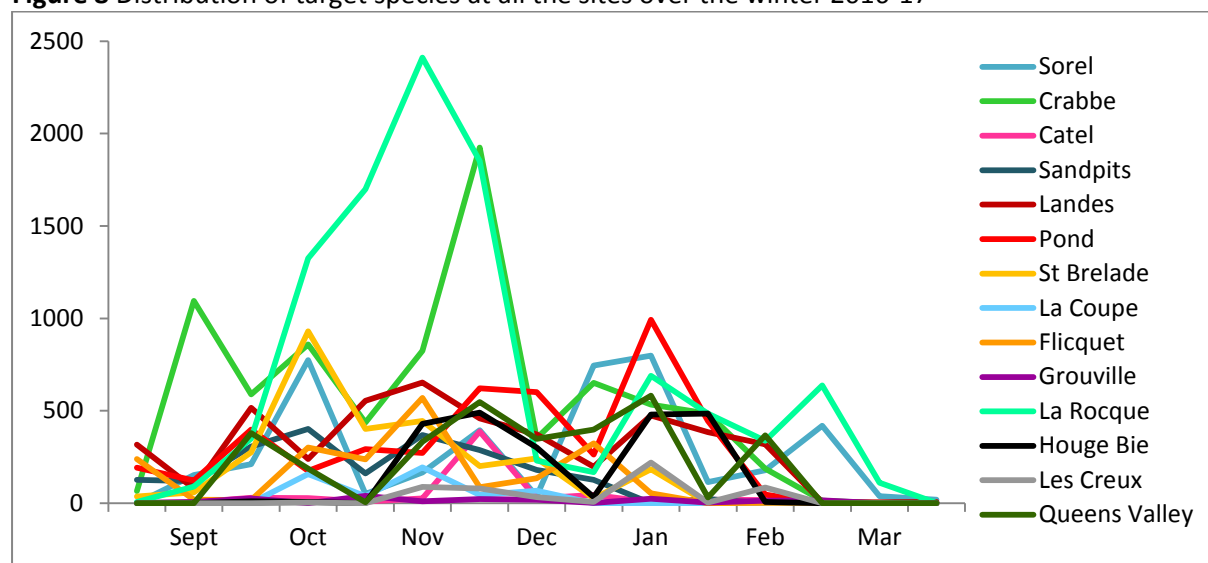
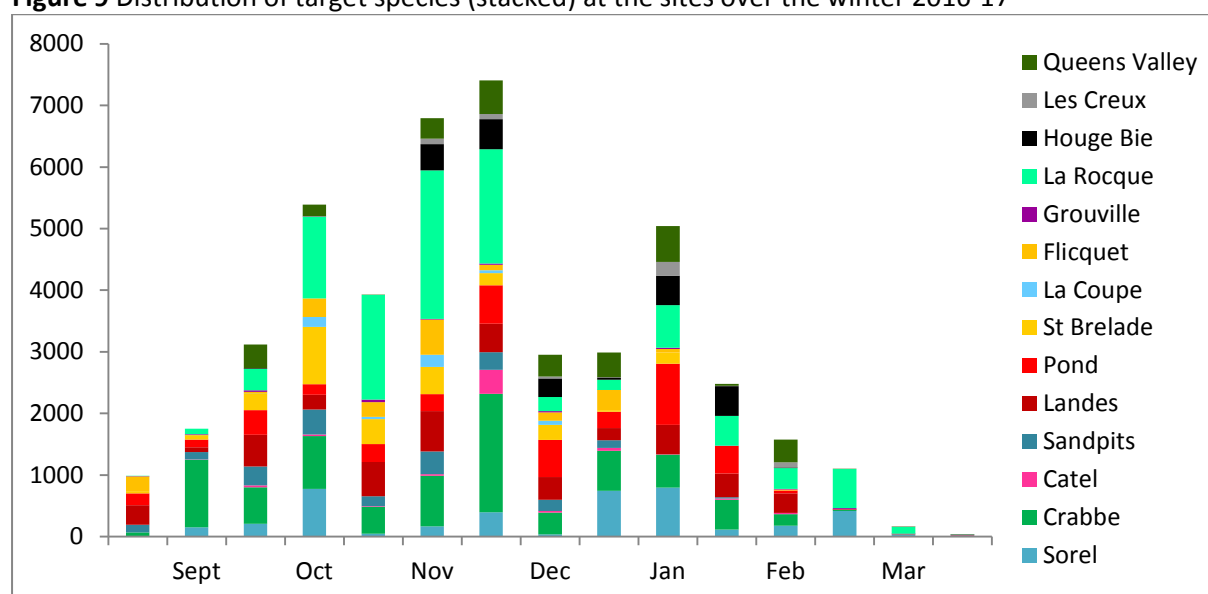


Figure 9 Distribution of target species (stacked) at the sites over the winter 2016-17



3.2.2 Discussion

Observations at the fields revealed that most of the birds (87.7%) belonged to species targeted by this project. The Reed Bunting had a particular good year, moving up from the tenth place to the fifth, and, downgrading the Stock Dove one place. The other species at the very top remained the same as the previous winter: Chaffinch, Linnet, Starling and Goldfinch. Meadow Pipits outnumbered Carrion Crows for the first time, whilst Greenfinches dropped from the sixth to the tenth place. Like the previous winter, three non-target species were amongst the top ten most abundant: the Stock Dove, Carrion Crow and Dunnock.

The net increase of 9% of birds recorded from the previous winter could be attributed to the 31.5% increase in planted area (9.8ha). However, the most accurate measure that we have, the bird density, decreased for the first time, being 14% lower than the previous winter. This represented a small decrease when compared to the increase rates achieved over the previous three years, but nevertheless it was the first year where numbers have failed to increase.

It is not known whether the reduction in bird density was a reflection of a real trend or a consequence of the relative failure of two sites, whose stats fell below the control site (La Coupe and C  tel), plus a third one doing poorly (Les Creux). This year bird populations might have suffered substantial losses across their breeding ranges, or have had a poor breeding season. The number of birds using the winter crops might be stabilizing and reaching a natural plateau based on the capacity of the crops. The data could also reflect the effects of bad weather on birds during some counts, although care was taken to carry out the surveys during good conditions. The reversal of the trend might also reflect changes on migration routes or wintering grounds for some species. Only more data from further years of monitoring will provide a clearer picture of the trend or trends over time.

In relation to individual sites, two sites were discontinued from the previous year: St Mary and Rozel. Three new sites were planted and added to the monitoring scheme: Queens Valley, Flicquet and Les Creux; and a fourth site known as Hougue Bie, which has been planted with WBCs for over a decade, was included in the monitoring surveys.

The sites with highest bird numbers were La Rocque, Queen's Valley, Les Landes, St Brelade and Crabb  . La Rocque was for a second year running the most successful site. The bird density increased even when the planted area doubled with two new fields. Its success is believed to be partly due to the antiquity of this site, as it has had winter bird crops for many years before BOTE was involved. The second best site was surprisingly the new field by Queens Valley. This field was identified as a good candidate for WBCs due to its favourable location, fringing the reservoir as well as its proximity to the reed beds of Grouville Marsh. The crop developed well and many target birds were observed feeding from it, especially Reed Buntings, which were found at the site as soon as the first were recorded in Jersey as they arrived from their breeding grounds.

Other newly established sites had fewer birds: Flicquet, comprising one field on an exposed slope above St Catherine's Breakwater, and Les Creux, which had problems with the crops not developing and an infestation of rogue millet.

When adding the bird totals from all the sites, a pattern emerged of spikes and dips in abundance. The first major spike was at the end of October, the second and largest at the end of November, and a third one in mid-January. The main trend across the winter followed a similar pattern from previous years, in which the largest numbers of birds were found at the crops between November and February. This pattern might reflect seasonal movements of migrant birds as they arrive in large numbers to the Island, joining resident birds as the food in the crops matures and becomes available. Decreases at the beginning of the year might reflect a depletion of resources in some of the fields or the start of the spring migration for some birds; however the strongest declines appear to follow the removal of crops to make way for the potatoes. An image produced to compare bird densities between years would offer a more balanced representation; the present graph, comparing net totals, shows the general patterns through the winters.

The fourteen sites varied in size, location, management regimes, types of crop, quality of boundaries, shape, soil and aspect. Some sites comprised fields clustered together and adjacent to each other, whilst others had various fields apart from each other. This meant that assessing the success of each site in comparison to others was a fraught task; conclusions were drawn with caution.

3.2.3 Conclusions

- The WBCs provided a food source for farmland birds during the winter 2016-17. This was inferred by the high rate of birds of target species observed feeding at the crops, followed by strong declines when the crops were ploughed
- More birds were recorded at the crops than any previous year, but the overall density was slightly lower than the previous year. The reasons for this were not known
- Aside from differences in crop quality, it was difficult to determine what made some sites more successful than others, due to the wide range of sizes, shapes, locations and management regimes. Recommendations for each site were based on their performance over previous years, and depended on each farm's management and schedule
- The main recommendation remains to plant a selection of different types of winter crops, across various sites with slightly different time schedules. This management would feed the highest number of farmland species, for a longer period of time, and would result in a staggered disappearance of the crops when they are ploughed. This would allow birds to relocate to sites that would be still standing. From a commercial point of view, a large number of fields per site would give farmers flexibility to rotate fields with WBCs and non-WBCs across sites and years.

4. RESULTS: PER SITE

4.1 SOREL

4.1.1 Description

This site is located in the north coast of Jersey, between the landmarks of Sorel Point and Devil's Hole, in the parish of St John. Most of the fields at this site are owned by the National Trust for Jersey (NTJ) and have been planted with winter bird crops since 2011, thanks to an agreement with the potato farmer who rents the land. The area was proposed formally by BOTE as a winter bird crop site by in 2013¹⁰ and a variety of habitat management work has been carried out, involving hedge restoration and conservation grazing in the surrounding grassland. The National Trust fields are also rotated so that two are always set-aside, and planted with barley which is then left as stubble.

In 2013 a total of eight fields were planted with WBCs. The site had positive results¹¹ and it was recommended that it should be planted for following winters. At the same time, a supplementary feeding operation was carried out at the site, with 20-40kg of bird food being put down twice a week between Jan and April 2014¹². The following winter the number of fields planted increased, and supplementary feeding was also provided in the late winter⁹.

This site has always been one of the largest in terms of area planted, but has struggled with underdeveloped crops and low bird densities. It is considered one of the 'late' sites as far as potato planting is concerned, and the farmers that plant there do not usually cover the potatoes with plastic. On the third winter (2015-16), an improved planting schedule produced the best bird crop yet. The number of target species increased from 11 to a record 13, which was the maximum for any site on that winter. The supplementary feeding operation was also carried out more efficiently, having had two previous years of experience to feedback into the management.

4.1.2 Crops

In 2016 the site had 13 fields (11 with a WBC and two in barley stubble), covering a total of 8.6ha (47.8vg). This site 'lost' a field from the previous winter whilst two new ones were added to the planting, one by each of the two farmers involved here. Most of the fields were planted between mid-June and mid-July 2016. Flailing the bird crops began on the last week of February 2017, with all the fields planted with potatoes by the end of March.

Photos 5-6 A field planted mid-June in development (left) and drying out (right)



Photos 7-8 A field planted mid-July in development (left) and drying out (right)



4.1.3 Birds

Sorel's location in the north coast makes it a good area for migrant birds in the autumn, and it certainly had good numbers arriving in late September and throughout November, especially Barn swallows. It is also a good site for local raptors and corvids, with all five resident species of diurnal raptors found regularly there as well as Ravens, Carrion Crows, and the re-introduced Red-billed Choughs. The 2016-17 saw good numbers of resident birds such as Blackbird, Robin, Dunnock and Wren, as well as some wintering Stonechats and Dartford Warblers. In late November there were also many butterflies using the flowering plants at the bird crops, especially Peacock butterflies, of which more than one hundred were found at a single field.

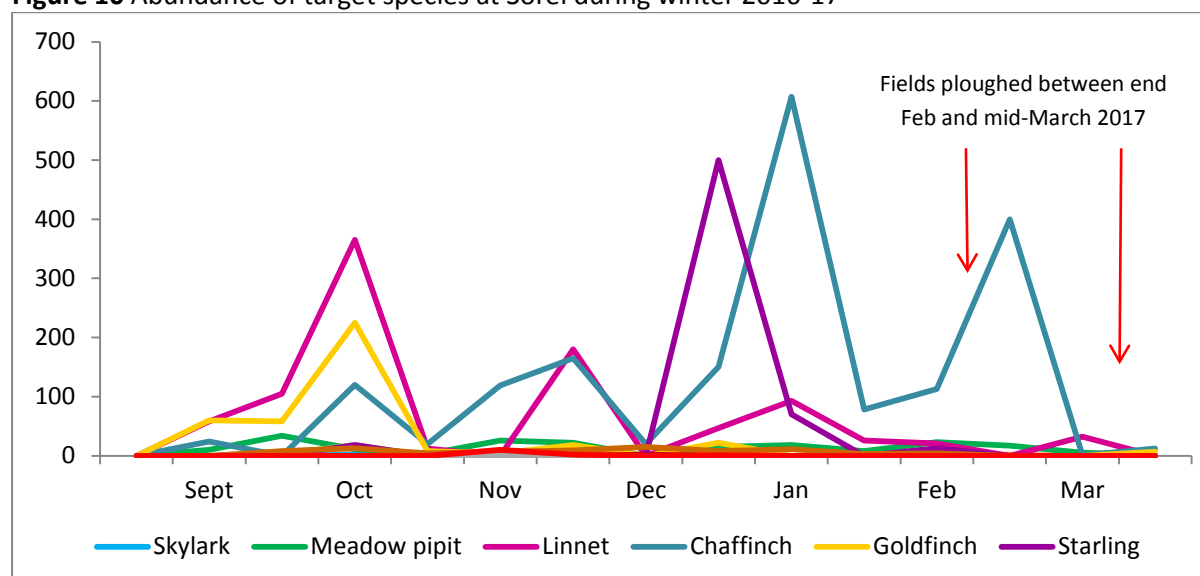
A total of 4,722 birds were recorded over the 15 surveys, of which 4,104 (87%) belonged to 11 target species found at the site. The five most abundant species were the same as the previous winter: Chaffinch, Linnet, Starling, Goldfinch and Meadow Pipit (Table 6).

Table 6 Abundance of target species (in bold) recorded at Sorel

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	1829	38.73	121.93	607	14.16
2	Linnet	939	19.89	62.60	365	7.27
3	Starling	601	12.73	40.07	500	4.65
4	Goldfinch	404	8.56	26.93	225	3.13
5	Meadow Pipit	193	4.09	12.87	34	1.49
6	Barn Swallow	155	3.28	10.33	120	1.20
7	Stock Dove	137	2.90	9.13	65	1.06
8	Song Thrush	82	1.74	5.47	15	0.63
9	Dunnock	54	1.14	3.60	14	0.42
10	Blackbird	39	0.83	2.60	10	0.30
Other target species present						
16	Greenfinch	21	0.44	1.40	18	0.16
17	Stonechat	18	0.38	1.20	4	0.14
18	Redwing	13	0.28	0.87	10	0.10
23	Skylark	2	0.04	0.13	2	0.02
23	Reed Bunting	2	0.04	0.13	2	0.02

The average density of target species was 35 birds/ha before most of the fields were ploughed; a figure lower than the 91.8 birds/ha of the previous year. This figure dropped to 18.5 after ploughing, representing a decrease of 47%. The paired T-test against the unplanted control site from 2013 indicated a statistical difference between the sites, similar to that obtained during the previous three winters.

Bird numbers started to increase at the beginning of October, with Linnet and Chaffinch keeping a constant presence across the winter. Linnets were observed in compact flocks, whereas Chaffinches were usually scattered throughout the site. Linnets and Starling numbers decreased from January onwards and did not recovered after the crops began to be flailed, whereas Chaffinches remained until the last fields were gone, by mid-March.

Figure 10 Abundance of target species at Sorel during winter 2016-17

4.1.4 Discussion

The size and position of this site gives it potential to feed large numbers of birds in winter, however its performance was poorer than most of the other sites. This could be due to the lack of mature hedgerows in the NTJ fields. Hedgerows were planted in 2010 in all the fields' boundaries but the saplings will need a few years to become big enough for birds to use them. The decrease in bird density from the previous winter might be partially related to the lack of supplementary food, as the feeding operation was discontinued this winter. However, the difficulty in monitoring and measuring the uptake of the feeding operation was the cause of discontinuation.

4.1.5 Recommendations

- Even though the results of this winter's WBC scheme were less positive than in previous years, this site's combination of favourable features such as locations, size, set-aside fields, some hedges of good quality, WBC fields' shared boundaries, and restoration of adjacent habitats makes it very suitable for a long-term winter bird crop scheme. It is, therefore, recommended that the planting of WBCs is continued and that at least the same fields are planted again next winter
- To continue planting this site until at the hedgerows planted in the NTJ fields are old enough to be used by birds, and re-assess in 5-10 years' time
- It is also recommended that further enhancement measures are implemented at this site, such as buffer strips, uncultivated headlands, increasing the variety of crops in rotation, and planting bird crops for breeding birds on set-aside land.

4.2 CRABBÉ

4.2.1 Description

This site is located west of Sorel, between the shooting range at Crabbé and the vineyard of St Mary. It has been planted with WBC and monitored by BOTE since 2013, achieving positive results^{11,9}. Supplementary feeding was also carried out in 2014, with 40kg of bird food put down weekly for the last few weeks of winter¹². At the initiative of a local farmer, and under advice from BOTE, a line of hedgerows was planted in early 2015 on the boundary on the opposite side of the road from the main WBC fields. Other fields in this area usually planted with maize, barley or grass, and cut or grazed. This provides a variety of heights and feeding opportunities for birds that search for invertebrates on short vegetation, such as larks and waders. In 2015 a fourth field was added to the planting (My311) and in 2016 a fifth (My 317-18).

4.2.2 Crops

In 2016 a total of five fields were planted with WBC at this site, covering a total area of 4.26ha (23.7vg). Most of them were planted during the first week of July.

All the fields at this site developed tall and thick crops, including the newly added field (My317/318).

Photos 9-10 The new field My317/318 in August (left) and October (right)



Most of the fields were flailed and ploughed for potatoes during the first week of March 2017, whilst one was left until the end of the month.

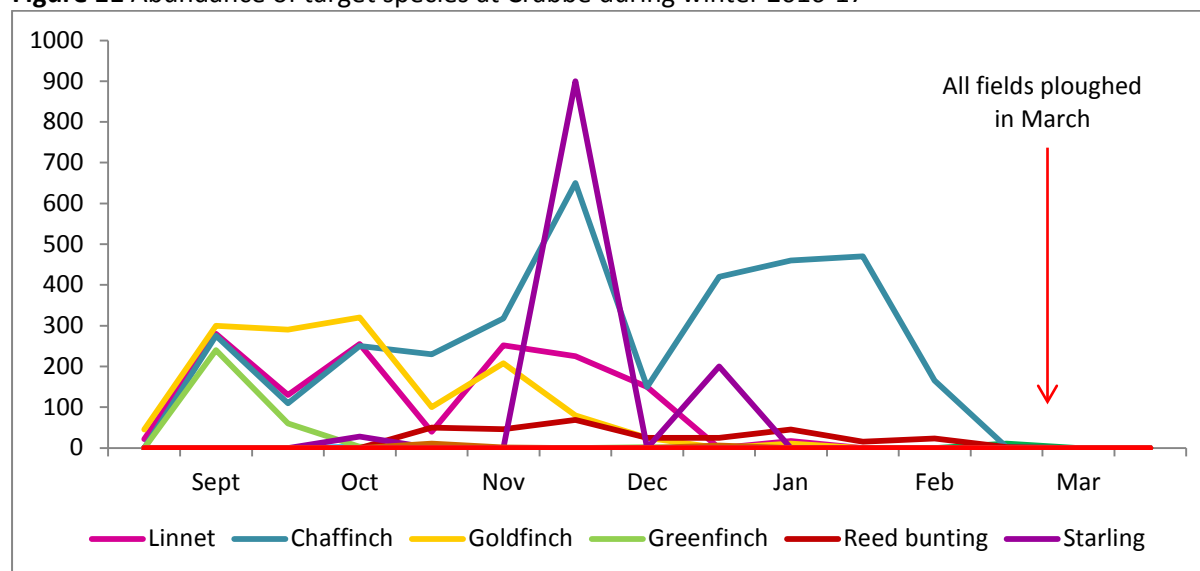
4.2.3 Birds

A total of 8,354 birds were recorded over the 15 surveys, of which 8,020 were target species (96%). The most abundant species was the Chaffinch with just over 40% of the records, followed by Linnet and Goldfinch with 16% each (Table 7). Six target species took the tops spots in abundance, with the Reed Bunting increasing dramatically at this site from the previous winter. The number of target species recorded dropped from 13 to 9.

Table 7 Abundance of target species (in bold) recorded at Crabbé

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	3500	41.9	466.7	650	112.5
2	Goldfinch	1379	16.5	180.9	320	40.6
3	Linnet	1371	16.4	181.3	255	41.0
4	Starling	1128	13.5	150.4	900	37.7
5	Greenfinch	310	3.7	41.3	5	6.6
6	Reed Bunting	300	3.6	40.0	69	10.0
7	Stock Dove	132	1.6	17.4	45	3.4
8	Carrion Crow	51	0.6	6.6	18	1.4
9	Wood Pigeon	46	0.6	5.4	3	0.9
10	Great Tit	30	0.4	4.0	5	0.9
Other target species present						
11	Song Thrush	18	0.2	2.4	11	0.6
13	Meadow Pipit	11	0.1	1.5	11	0.4
15	Skylark	3	0.0	0.4	3	0.1

With an average density of 125.3 birds/ha this site was slightly lower than the previous year (146.4) but higher than the average across sites. The T-test against the unplanted control site from 2013 indicated a statistical difference between it and the control, which has been maintained since 2013.

Figure 11 Abundance of target species at Crabbé during winter 2016-17

There was a marked peak of Chaffinch, Starling and Linnets between November and December, whereas Greenfinch and Goldfinch seemed more present between October and November. The new field, thick and packed with sunflowers, and flanked on two sides by trees and shrubs, proved particularly attractive to Starlings. Another field with fewer sunflowers, but dense with fat-hen was very popular with Reed Buntings, which had a

maximum count of 69 birds. Meadow Pipits appeared towards the end of the winter season and right after the fields were flailed.

4.2.4 Discussion

This particular site has proven relatively successful since the scheme began, so it was considered positive that a new field was added. This might have caused the drop in the average density of birds, but the net numbers increased from the previous winter. The crops developed well and the birds appeared in large flocks to feed at the site.

The new field has a line of conifers at the western side and a hedge of shrubs to the north, but its eastern and southern boundaries are completely bare. These and other WBC boundaries would benefit from restoration.

4.2.5 Recommendations

- To continue planting and monitoring this site for the foreseeable future
- To increase the planted area whenever possible, to create more resilience from a staggered management and removal of crops in the spring
- To restore the boundaries of the fields with newly-planted hedgerows and investigate the possibility of set-aside land that can be left with some type of bird crop until the spring.

4.3 CÂTEL

4.3.1 Description

This site is located in the north coast of Jersey, between Grève de Lecq and the Crabbé shooting range. A long and narrow parcel of scrub and green waste runs between fields comprising a mixed shrub of bramble, gorse and hawthorn. The fields have no hedges but there is a line of tall trees on the other side of the road behind the shooting range. This area was proposed as a conservation site by BOTE in 2013¹⁰ with three fields being planted with WBCs in 2013 and again in 2014. Crops at this site failed to develop as well as in other sites, and never attracted large numbers of birds. Also, these fields are needed for potato quite early in the new year, so in 2015 it was agreed with the farmer to plant a crop of mustard (flower and seed-bearing, but of lesser value than the bird crops), and to continue monitoring the birds during winter.

4.3.2 Crops

Based on previous results, in 2016 it was agreed again with the farmer to plant mustard again, as it was thought that it would be of better value to ground-feeding farmland birds such as Skylark and Meadow Pipits. After the crop had matured and dried, the fields were cut in November and left as a short stubble for the rest of the winter. They were ploughed during the first week of March and the potato crop was temporarily covered in plastic.

Photo 11 Field My95 in December



4.3.3 Birds

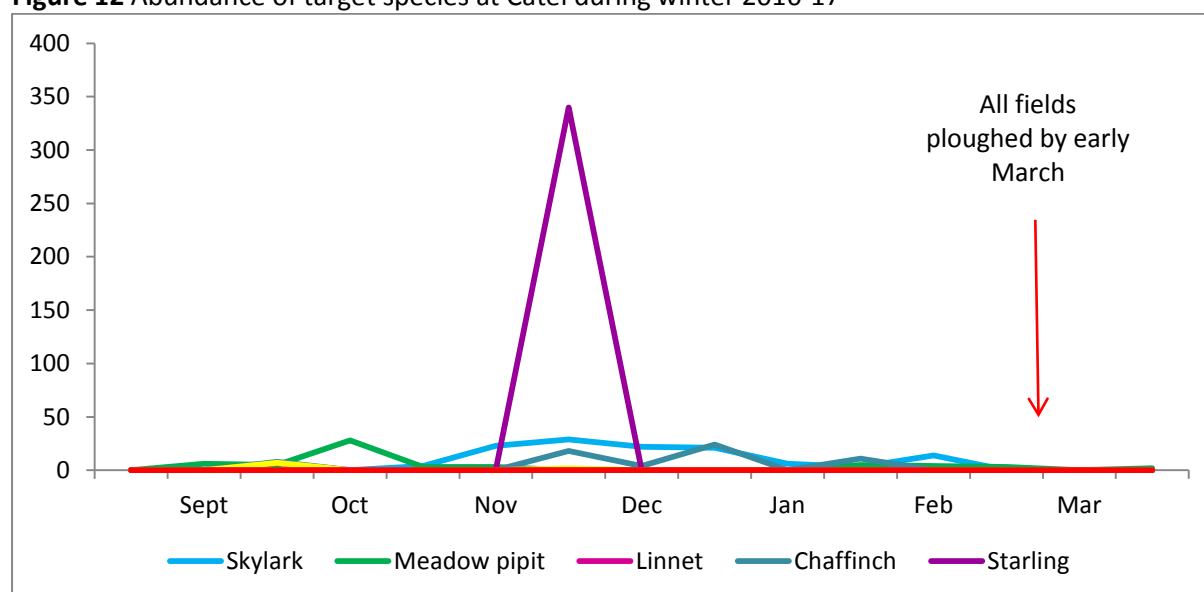
A total of 729 birds were recorded of which 607 (83.26%) were of target species. Seven target species were recorded at the site, one more than the previous year, and five rather than three were amongst the ten most abundant species.

It was a particularly good year for Starlings at this site, with 340 counted during one particular survey. Numbers of Skylark and Meadow Pipit remained consistent throughout the winter, with Linnets and Stonechats appearing regularly too. A Lapwing was observed in the short stubble on the largest field.

Table 8 Abundance of target species (in bold) recorded at Câtel

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Starling	340	46.6	22.7	340	14.0
2	Skylark	122	16.7	8.1	29	5.0
3	Chaffinch	65	8.9	4.3	24	2.7
4	Meadow Pipit	87	11.9	3.6	28	2.2
5	Pheasant	22	3.0	1.3	14	0.8
6	Stock Dove	17	2.3	1.1	17	0.7
7	Buzzard	13	1.8	0.1	11	0.1
8	Dunnock	11	1.5	0.7	4	0.5
9	Great Tit	10	1.4	0.7	7	0.4
10	Goldfinch	9	1.2	0.6	7	0.4
10	Carrion Crow	9	1.2	0.3	2	0.2
Other target species present						
11	Linnet	7	1.0	0.5	7	0.3
13	Stonechat	5	0.7	0.3	2	0.2

The average density of target birds remained very close to the previous year at 31 birds/ha, and quite below the scheme's overall density for the year. The T-test showed no statistical difference between this and the unplanted control site.

Figure 12 Abundance of target species at Câtel during winter 2016-17

Numbers tailed off between February and March, especially after the fields were ploughed and the potato crop was planted.

4.3.4 Discussion

This is the only site where it was decided to discontinue the winter bird crops, as it was believed that other seed-bearing crops might be useful to some birds. The decision was the result of bird numbers being lower than of other sites and the early ploughing at this site for

potatoes. It was believed that the site could be suitable for birds that prefer short crops and fed on the ground, and monitoring was continued. The results of 2015-16 were positive and indicated that the bird density had increased by 90% from the previous year.

This year the site was planted again with a mustard crop, which was cut early and left short for the rest of the winter. Monitoring was carried out again and data showed that numbers had remained similar to the previous year. There was a regular presence of Meadow Pipits and for the first time a flock of Starlings was also observed at the site. This site still remains the only one where Skylarks are found consistently throughout the winter.

The results suggests again, like the previous winter, that this site, if managed correctly and planted with a suitable seed-bearing crop, the site can cater for certain target birds such as Skylark and Meadow Pipit. If other features at this site were improved or created, such as buffer strips, set aside fields or restored hedges, other target species such as Stonechat or Reed Bunting might also be attracted to the site.

4.3.5 Recommendations

- It is recommended that this site is planted again with a seed-bearing crop such as mustard or barley which can be cut early and left as a stubble over winter
- To expand the planted area to adjacent fields, with a similar crop or left as set-aside for seedy weeds to develop
- To restore some of the boundaries, especially alongside the road, with hedgerows rich in hawthorn, gorse and other sturdy plants adapted to windswept coastal locations.

4.4 LES LANDES

4.4.1 Description

Located in the north-west of Jersey, near Les Landes SSI (St Ouen), this site was proposed for WBCs in 2014 by a farmer already involved at another site. Two fields were found suitable, framed by hedges and tall trees at the western end, followed by a small pond, with conifers and broadleaf trees. Other fields in the vicinity are usually planted with grass and cut early or grazed. Two small fields are planted regularly with dwarf sunflowers too. The WBC fields are near one of the conservation areas proposed by BOTE in the Area 1 Management Plan¹⁰. The two fields were planted in 2014 and a supplementary feeding operation was also carried out there towards the end of the winter. In 2015 two new fields were added to the site, taking the total area planted to 3.35ha (18.61vg).

4.4.2 Crops

In 2016 one of the two new fields was discontinued, meaning a total of three fields covering a combined 2.72ha (15vg), planted at the end of May. The bird crops grew well albeit with a relatively low density of sunflowers. Other plants in the crop grew tall and produced a variety of small seeds. By the end of November the crops had dried and begun to lose height. The fields were left standing until mid-February 2017, when they were flailed and ploughed.

Photos 12-13 A field planted on 23rd May (left) and drying up (November)



4.4.3 Birds

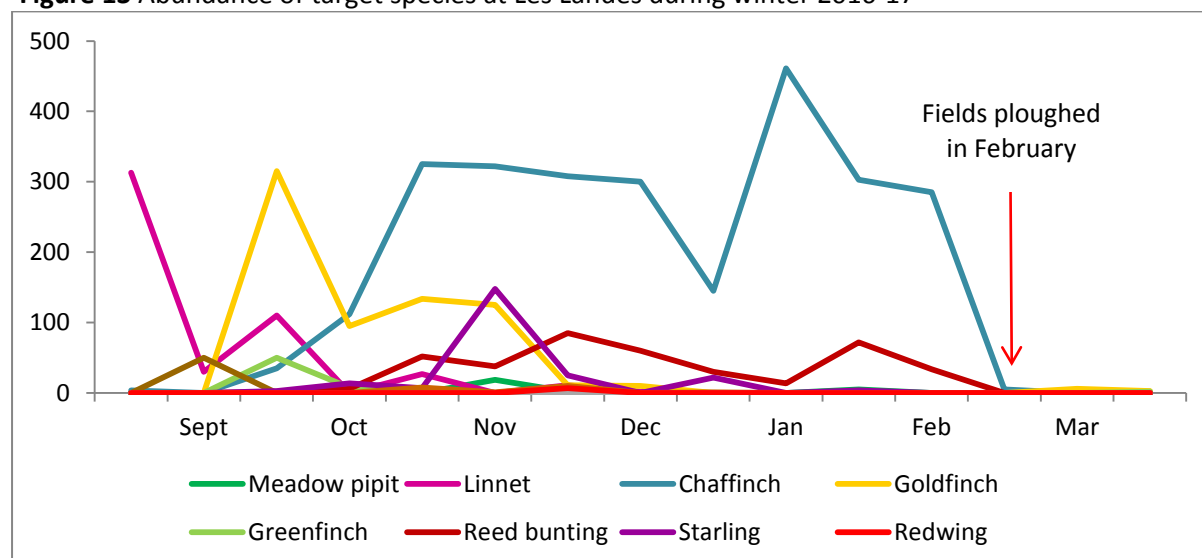
A total of 6,366 birds were recorded over the course of the winter surveys, of which 5,936 (93.2%) belonged to target species. Eleven target species were recorded at the site, of which seven took the top spots in abundance. Chaffinch was by far the most abundant (54%), with Goldfinch (14.6%) and Linnet (10%) being the closest followers.

Table 9 Abundance of target species (in bold) recorded at Les Landes

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	2607	54.4	173.8	461	63.9
2	Goldfinch	699	14.6	46.6	315	17.1
3	Linnet	493	10.3	32.9	110	12.1
4	Reed Bunting	392	8.2	26.1	85	9.6
5	Starling	223	4.7	14.9	148	5.5
6	Greenfinch	60	1.3	4.0	50	1.5
7	House Sparrow	50	1.0	3.3	50	1.2
8	Robin	39	0.8	2.6	6	1.0
9	Wood Pigeon	37	0.8	2.5	15	0.9
10	Meadow Pipit	26	0.5	1.7	19	0.6
Other target species present						
12	Song Thrush	20	0.4	1.3	10	0.5
18	Redwing	7	0.1	0.5	7	0.2
19	Stonechat	6	0.1	0.4	2	0.1
21	Skylark	2	0.0	0.1	2	0.0

The density of target species was 140 birds/ha, increasing by 18.6% from the previous year. This dropped to 2.2 birds/ha after the fields were ploughed. For a third year running, the T-test against the control site from 2013 showed a strong difference between them.

Birds were observed using all three fields without a particular preference. There were good numbers of Chaffinch until mid-February, until the potato crops were covered in plastic. Goldfinch and Reed Bunting were observed with regularity, less so small flocks of Linnets which were observed arriving or leaving the crops at times. Occasional visitors to the crops included Stonechats, Redwings, Starlings, a Merlin, and when the crops lost height also Meadow Pipits and Lapwings.

Figure 13 Abundance of target species at Les Landes during winter 2016-17

4.4.4 Discussion

This has been a quite successful site since it was started two winters ago, attracting numbers of birds always above the scheme's average. During the previous winter the average density dropped slightly and then it increased again in 2016-17. This could reflect the fact that the planted area increased with two new fields in 2015, but one in particular did not develop the crop as expected and failed to attract birds. This field was not planted in 2016 and the reduction in total area might have resulted on the increase in bird density.

This site, and the two original fields in particular, are usually left standing quite late, and bird numbers appear to increase towards the end of the season (January and February). It has been suggested that this reflects the arrival of birds that usually feed at other sites, after these sites have been flailed. Evidence from bird ringing at the site supported this idea, with a Reed Bunting being originally ringed at the Pond fields and caught afterwards at Les Landes, days after the Pond fields had been flailed.

To conclude, this site not only has many important features for birds - thick hedges, tall trees, a pond, stubble and grazed fields in the vicinity – but thanks to a late planting of potatoes it is possibly one of the most important sites on the west of the Island.

4.4.5 Recommendations

- To plant this site for the foreseeable future, especially the same three fields that were planted in 2016
- To add new fields in the vicinity when possible
- To encourage other farmers participating at this site to leave the WBCs standing as late as possible
- To restore the hedgerows of the two main fields between the road and their western boundaries.

4.5 POND

4.5.1 Description

This site is located in St Ouen's Bay, on the western boundaries of the Pond SSI. It was proposed for WBC in 2014 to one of the farmers involved in the scheme, who offered to plant four fields at the site, and was joined by a second farmer with two more fields. In 2015 the combined total of land planted was 7.76ha. This site is part of a wider area considered of conservation importance and highlighted by the BOTE Area 2 survey¹³. Some of the fields share boundaries with each other, others are found a hundred or more meters away, scattered over a large area. Some fields have thick hedges in their boundaries whilst others are near grazed land, watering ponds, scrub or reedbeds.

4.5.2 Crops

In 2016 one new field was added on the southern end of the site, whilst another was discontinued at the northern end due to poor crop development. Two half-fields were also discontinued, leaving the total at eight fields which covered 8.14ha (45.2vg).

Most of the fields grew tall crops with well-developed plants and seeds. The new field, P34, and field O1600 were particularly thick and tall.

The management of the potato crop on these fields was staggered due to the involvement of two different farmers at this site. This meant that whilst some of the fields were flailed as early as the first week of January, others remained standing until the last week of February. Most fields were covered in plastic by early March.

Photos 14-15 The new field P34 in October (left) and drying up (right) in December



4.5.3 Birds

A total of 5,203 birds were recorded of which 4,433 (85.2%) belonged to target species. This was a similar percentage as the previous winter. Chaffinch was the most abundant species (43%) followed from afar by Starling (9%) and Linnet (8.7%). Eleven target species were recorded at this site and six of them were also the six most abundant overall.

Table 10 Abundance of target species (in bold) recorded at Pond

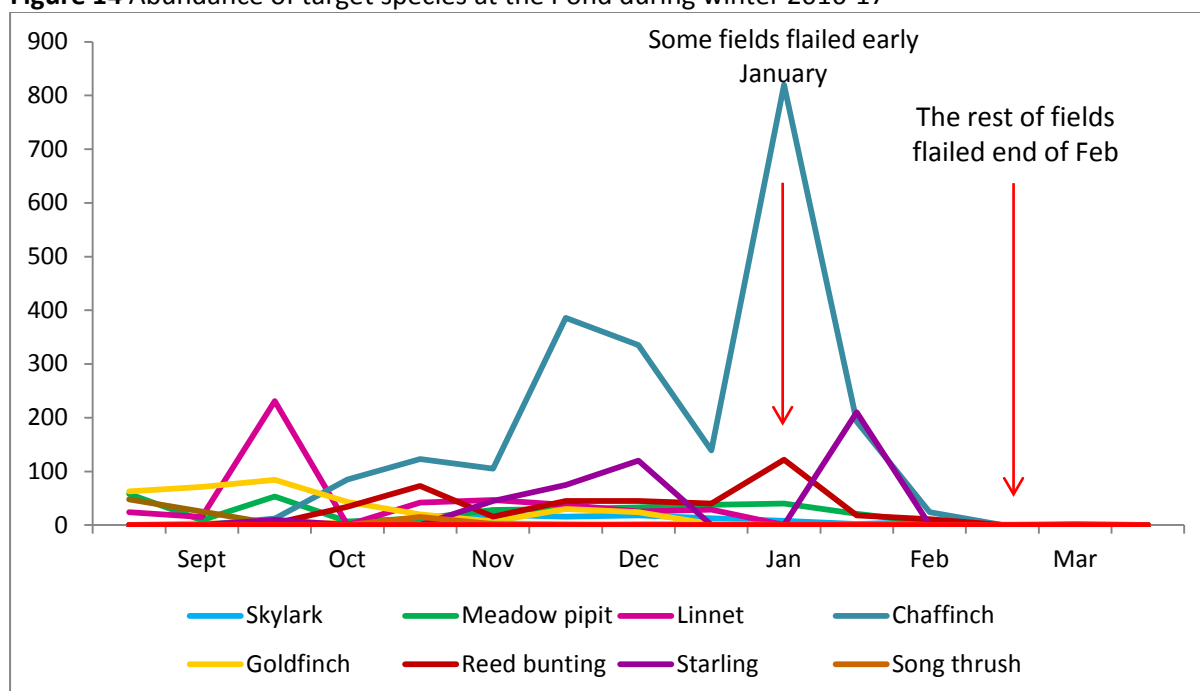
Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	2222	42.8	148.1	820	18.2
2	Starling	460	8.9	30.7	210	3.8
3	Linnet	451	8.7	30.1	231	3.7
4	Reed Bunting	407	7.8	27.1	122	3.3
5	Goldfinch	344	6.6	22.9	84	2.8
6	Meadow Pipit	336	6.5	22.4	53	2.8
7	Stock Dove	145	2.8	9.7	142	1.2
8	Wood Pigeon	137	2.6	9.1	54	1.1
9	Barn Swallow	102	2.0	6.8	102	0.8
10	Skylark	89	1.7	5.9	19	0.7
Other target species present						
11	House Sparrow	75	1.4	5.0	48	0.6
17	Stonechat	27	0.5	1.8	5	0.2
20	Song Thrush	17	0.3	1.1	15	0.1
24	Greenfinch	5	0.1	0.3	3	0.0

With an average of 45 birds/ha, the bird density at this site was lower than the 54 birds/ha of the previous winter. The density dropped dramatically by 99.7% after the fields were flailed. The T-test against the 2013 control site showed a statistical difference between this and the control site.

Chaffinches were found in large numbers throughout the winter, increasing between mid-December and mid-January. Starlings and Reed Buntings were observed using the fields frequently, whereas Linnet numbers peaked early (with a count of 450 in mid-October) and then remained low for the rest of the winter.

Like previous years, there was a slight difference on how species used the various fields across the site. The field at the crossroads (O1590) attracted House Sparrows, bouncing between the field's edge and the garden of the house on the opposite side of the road. The new field to the south attracted a wide variety of species including Linnets, Goldfinches, Chaffinches and even Cetti's Warblers. The fields closer to the main pond, as they were more exposed and sparse, were preferred by Meadow Pipits, Skylarks and Stonechats, as well as migrating Wheatears, Whinchats and Yellow Wagtails. This site was the second best for Skylarks with the highest count being 19 on one survey, whereas the maximum count of 122 Reed Buntings in that area was slightly lower than previous years. There was a marked absence of Greenfinch and Brambling, perhaps due to the lack of trees and wooded areas in the vicinity.

Figure 14 Abundance of target species at the Pond during winter 2016-17



Most species started to decline after January, with Chaffinch and Starling the last ones remaining until early February.

4.5.4 Discussion

This site is considered a work in progress, complex to manage and to monitor. Despite the discontinuation of one large and two small fields which did not yield crops or birds, and the addition of a new one which proved interesting to many species, the density dropped from the previous winter. In contrast, whilst in the previous winter the bird density showed the smallest decline between before and after fields being flailed across all the sites, this year the decline of birds was very dramatic at 99.7%. Last winter's results might have indicated that the birds were not relying so much on the crops for food, whereas on this winter the marked decline after the fields were flailed certainly seems to point at a dependency on the crops.

Like previous winters, other fields in the area were also of value to species such as Stonechat, Skylark, Meadow Pipit, Whinchat and Wheatear, which were often observed out in the open and boundaries of short crops of mustard, cut grass, and tracks.

As mentioned above, this is a complex site to manage and monitor, but it is believed that its position, next to St Ouen's Pond SSI and National Trust land, offers much potential to benefit resident and wintering birds in the long term.

4.5.5 Recommendations

- To continue planting and monitoring winter bird crops at this site for the foreseeable future
- To plant the fields with less successful crops with a crop of barley or mustard, to be cut and left until the start of the potato season. Additionally, to encourage farmers to plant such crops on land not used for WBCs
- To add new WBC fields to the site scheme and when possible, to prioritise them at locations that would connect isolated fields
- To encourage farmers to leave under-performing crops standing as opposed to being flailed early in the season, as weeds such as fat-hen proliferate in these crops and become a valuable resource for certain species such as the Reed Bunting
- To monitor the detrimental effect of unwanted birds such as Pheasants, feral geese and ducks on the development and condition of the WBCs.

4.6 ST BRELADE

4.6.1 Description

This site was planted for the first time in 2014 and is the only one in the parish of St Brelade. It originally comprised three adjacent fields, with a fourth field added in 2015. The fields are almost completely surrounded by thick hedges and there is a valley with broad-leaf woodland sloping down onto the A1 by La Haule Slip.

4.6.2 Crops

The same four fields were planted again in 2016, during the last week of May. One of them was planted with prickly potato instead of the winter bird crop, in order to address a soil issue with potato cyst nematode. Birds, especially chaffinch, have been seen feeding at prickly potato fields, and the small seeds are considered of some benefit for birds; therefore the field was considered part of the site, with had the same combined crop area of 2.57ha (14.3vg) as the previous year. Like the previous winter, the tallest and densest crop was found in field B906. All the fields were flailed quite early on the season, on 2nd January 2017. An area between the fields has been a building site for a new house for the last two years.

Photos 16-17 Field B906 in July (left) and November (right)



4.6.3 Birds

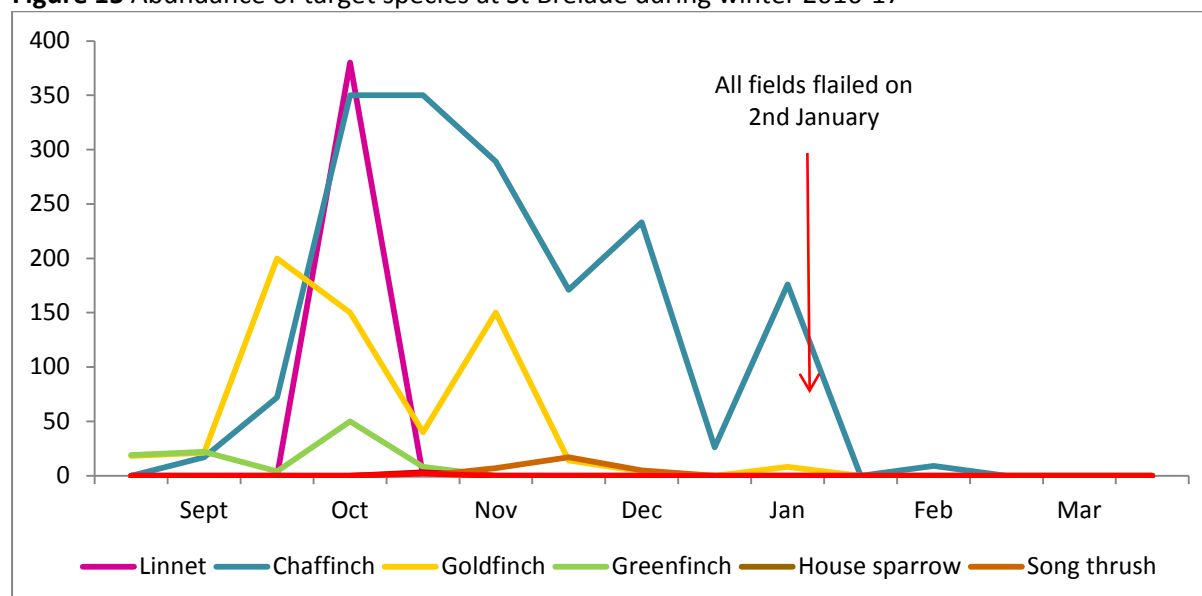
A total of 3,179 birds were recorded of which 2,815 (88.5%) belonged to target species. Seven target species were recorded at the site; Chaffinch clearly dominating with 53% of all records. Goldfinch and Linnet followed from afar with 19% and 12% of the records respectively.

Table 11 Abundance of target species (in bold) recorded at St Brelade

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	1693	53.3	112.9	350	43.9
2	Goldfinch	605	19.0	40.3	200	15.7
3	Linnet	380	12.0	25.3	380	9.9
4	Greenfinch	103	3.2	6.9	50	2.7
5	Dunnock	67	2.1	4.5	20	1.7
6	Carrion Crow	57	1.8	3.8	23	1.5
7	Great Tit	56	1.8	3.7	19	1.5
8	Blackbird	51	1.6	3.4	18	1.3
9	Robin	38	1.2	2.5	14	1.0
9	Wood Pigeon	38	1.2	2.5	16	1.0
10	Song Thrush	29	0.9	1.9	17	0.8
Other target species present						
16	Reed Bunting	3	0.1	0.2	3	0.1
17	Redwing	2	0.1	0.1	2	0.1

The density of target species at the site was 126.6 birds/ha on average, slightly higher than the previous year and above the winter average for the scheme. The T-test against the unplanted control site showed a statistical difference between both.

Most birds were recorded in field B906, like the previous year. Small flocks were also found using the other fields, especially the flailed margins on the eastern boundaries and the slopes close to the woodland.

Figure 15 Abundance of target species at St Brelade during winter 2016-17

Bird numbers, especially Chaffinches and Linnets, increased in October, and in the case of Chaffinches remained similar until December. Linnets were observed twice, with a flock of 350 birds in late October, whilst Reed Buntings were only recorded once, in November.

Greenfinch and Goldfinch were observed regularly at the site, as well as garden and woodland birds such as Robin, Blackbird, Wren, Dunnock and Great Tit. Numbers declined quickly after the fields were flailed.

4.6.4 Discussion

For a second year running this site has attracted large numbers of finches, especially Chaffinch, Greenfinch and Goldfinch, and for the first time a flock of Linnets too. The preference that most finches seem to have for field B906 might be explained by its well-developed crop as well as the two thick and tall hedges that flank him and the tall trees by a house on its northern corner. Reed Bunting, Skylark and Stonechat were mostly absent, probably due to the lack of reeds, coastal scrub, gorse, and open grassland.

4.6.5 Recommendations

- To continue planting and monitoring winter bird crops for the foreseeable future
- To investigate the possibility of attracting other target species by planting short crops in the vicinity, such as barley or prickly potato, which would be left in stubble over winter.

4.7 LA COUPE

4.7.1 Description

This site comprises three fields at the north-east of the Island, directly above La Coupe bay. It has been running since 2014-15 thanks to the co-operation between the local farmer and the National Trust for Jersey, which owns approximately half of the site. It features thick, tall hedges across the fields and is surrounded by fields of grass.

4.7.2 Crops

This year only one of the three fields was planted with a winter bird crop, whilst the other two had a grass crop. The planted area therefore was reduced to 0.81ha (4.5vg). The bird crop did fall shorter than at other sites, with fewer sunflowers developing. This and the other two fields were flailed during the second week of January and the potato crop that followed was covered in sheets of plastic.

Photos 18-19 The field developing in July and drying up in October



4.7.3 Birds

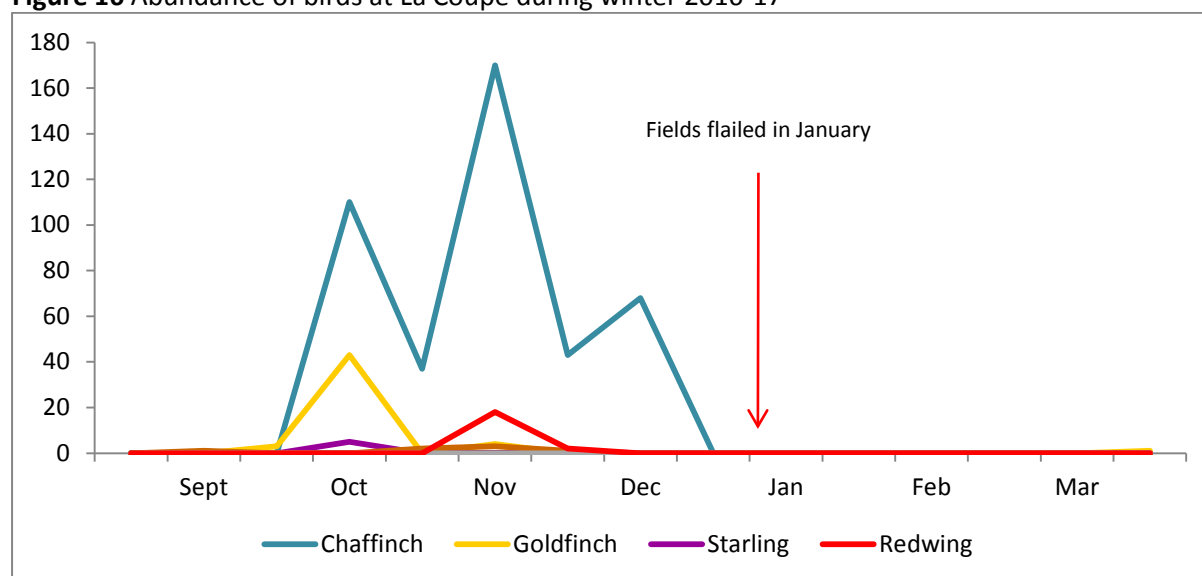
A total of 693 birds were recorded over the winter surveys, of which 511 (74%) belonged to target species. Only four target species were recorded: Chaffinch, which was by far the most abundant with 62% of all records, Goldfinch, following with only 7.4%, seldom records of Redwing in migration, and Starlings.

Like previous years, the location of this site near the NE corner of the Island makes it a landing place for migrating birds in the autumn, especially Robins and thrushes, hence the high numbers of Robins, Blackbirds and Redwings. Barn Swallows were also recorded during their migration and they were observed feeding on the wing above the crops. Chaffinches reached maximum numbers in mid-November.

Table 12 Abundance of target species (in bold) recorded at La Coupe

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	428	61.8	28.5	170	35.2
2	Goldfinch	51	7.4	3.4	43	4.2
3	Robin	37	5.3	2.5	8	3.0
4	Wood Pigeon	35	5.1	2.3	9	2.9
5	Barn Swallow	29	4.2	1.9	17	2.4
6	Dunnoch	29	4.2	1.9	7	2.4
7	Redwing	20	2.9	1.3	18	1.6
8	Pheasant	17	2.5	1.1	11	1.4
9	Blackbird	15	2.2	1.0	3	1.2
10	Wren	8	1.2	0.5	2	0.7
Other target species present						
11	Starling	5	0.7	0.3	5	0.4

Bird density at this site fell from 109 birds/ha in 2015-16 to 79 birds/ha, and it also fell short of the winter's average across the sites. After the fields were ploughed the bird numbers fell dramatically by 99.8%.

Figure 16 Abundance of birds at La Coupe during winter 2016-17

4.7.4 Discussion

Whilst the numbers of birds remained low at this site, the density was still higher than other sites in the scheme, and it provided food for birds (mainly Chaffinch) until the fields were flailed. Records of migrant thrushes and the presence of Barn Swallows at certain times indicate the importance that this site might have for passage birds as well as wintering finches.

4.7.5 Recommendations

- To continue planting and monitoring winter birds crops at this site for the foreseeable future
- To expand the site by planting more fields near the old ones
- To maintain a varied crop mixture that includes kale or similar brassicas, to attract invertebrates that thrushes can eat
- To restore nearby hedges with native, berry-loaded species.

4.8 SANDPITS

4.8.1 Description

This site was also added in 2015, with three fields offered by a farmer that was already in the scheme at other sites. The Sandpit fields are adjacent to the commercial sand quarry and reservoir, and on the opposite side of the road from Les Blanches Banques SSI, where Linnet, Meadow Pipit, Skylark and Stonechat breed. The fields are flanked on one side by a line of tall conifers and by tamarisk on the other side, and the sandpits comprise valuable habitats, such as smaller ponds, reeds and marram grass. Birds that breed at the sandpits include Little grebe, Marsh harrier, Tufted duck and Oystercatcher, as well as the only colony of Sand Martin in the Channel Islands. Large numbers of Barn swallows, House Martins and Swifts are often observed sweeping the air above the reservoir to feed on small insects.

4.8.2 Crops

The three fields were planted at the end of May 2016, covering a total of 2.35ha (13.1vg). The fields developed all the various species in the mix, with mustard being the most noticeable, whereas sunflowers seemed to dry up too early and did not grow as tall as in other locations. All three fields were flailed on 3rd January 2017, and the potato crop was covered with sheets of plastic.

Photos 20-21 A field developing in July, and drying up in October

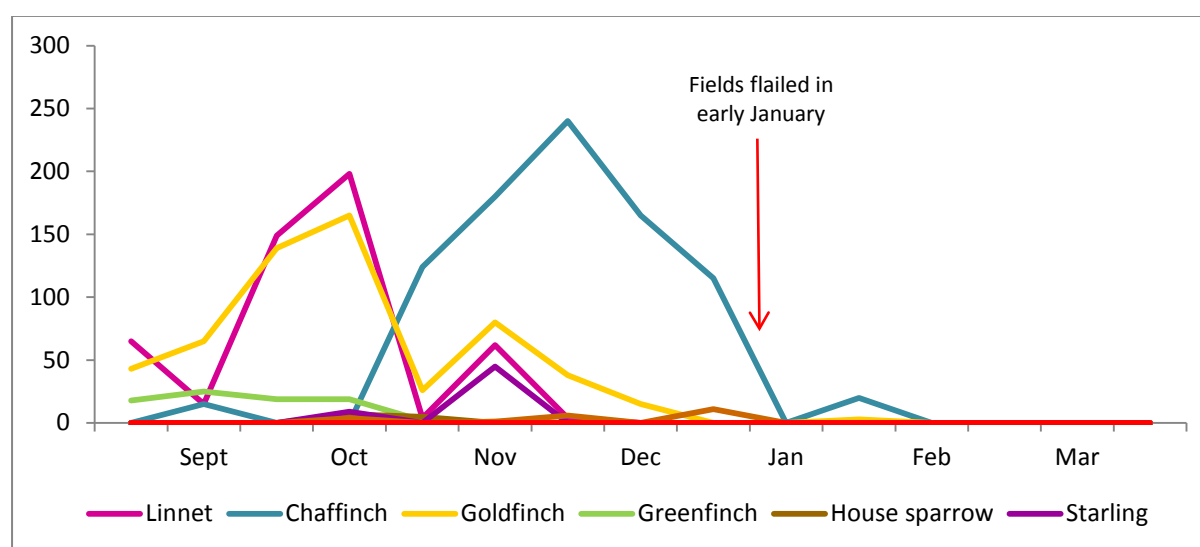


4.8.3 Birds

A total of 2,635 birds were recorded at this site during the winter surveys, of which 2,102 (80%) belonged to target species. Eight target species were recorded at the site, two more than the previous winter. The three most abundant were Chaffinch (32.6%), Goldfinch (22%) and Linnet (19%).

Table 13 Abundance of target species (in bold) recorded at the Sandpits

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	859	32.6	57.3	240	24.4
2	Goldfinch	574	21.8	38.3	139	16.3
3	Linnet	497	18.9	33.1	198	14.1
4	Stock Dove	188	7.1	12.5	75	5.3
5	Greenfinch	83	3.1	5.5	25	2.4
6	Dunnock	81	3.1	5.4	18	2.3
7	Wood Pigeon	71	2.7	4.7	27	2.0
8	Starling	54	2.0	3.6	45	1.5
9	Barn Swallow	40	1.5	2.7	40	1.1
10	Magpie	36	1.4	2.4	26	1.0
Other target species present						
12	Song Thrush	22	0.8	1.5	11	0.6
15	House Sparrow	12	0.5	0.8	7	0.3
22	Stonechat	1	0.0	0.1	1	0.0

Figure 17 Abundance of target species at the Sandpits during winter 2016-17

Linnet and Goldfinch numbers peaked early between September and October, and when they started to decline in early November, Chaffinches began to increase. House Sparrows and Greenfinches were regularly observed albeit in low numbers, whilst most of the Starlings were observed at once, in November. As expected, hirundines and especially Barn swallows were observed feeding on the wing above the crops. Birds started to decline gradually from December onwards, and did not recover after the fields were flailed.

The average density of target birds was 104birds/ha, much higher than the 70birds/ha of the previous winter, and it decreased to 9birds/ha after the fields were ploughed (a 91% drop). The T-test results suggested a statistical difference between birds' presence at this site against the unplanted site.

4.8.4 Discussion

Unlike other sites the number of Goldfinches and Linnets was close to Chaffinches, like the previous winter. The crops, even though not as developed as those at other sites, did attract good numbers of birds, with an increase of density compared to the previous winter. Unfortunately this site was flailed quite early in the new year, but the benefits that it provided for many birds, would support the continuation of the crops in the foreseeable future.

4.8.5 Recommendations

- To continue planting winter bird crops and monitoring birds at this site.
- To increase the planting area to the other side of the line of conifers.
- To encourage a flailing date as late as possible, and not earlier than January.

4.9 GROUVILLE

4.9.1 Description

Winter bird crops were proposed in this area as they would have potential value for many bird species - mainly because of its location adjacent to the Grouville Marsh SSI and the NTJ Nature Reserve Les Maltières. The SSI comprises a variety of habitats of great importance to wildlife such as reeds, willow copse and grazed pastures, but it is also adjacent to the Grouville Common and golf course, which holds the only known breeding population of the Cirl Buntings in the Channel Islands (a UK Red-listed species). In 2015 the site was planted for the first time with one field on the northern boundary of Les Maltières⁵.

4.9.2 Crops

In 2016 a second field was added on the southern side of Les Maltières, bringing the total planted area to 1.36ha (7.36vg).

The crops at the fields developed all the plants in the mix, with large densities of mustard and sunflowers that provided seeds towards the end of the year. Field G219 in particular developed the largest sunflowers of the scheme for a second year running. Field G234 was not so successful but provided a thick crop of mustard and gold of pleasure.

This was one of the latest sites for the potato crop, and the farmer was keen to leave the winter bird crop as late as possible. Both fields were flailed and ploughed on 27th March.

Photos 22-25 Field G219 in August, September, October and November (left to right)



4.9.3 Birds

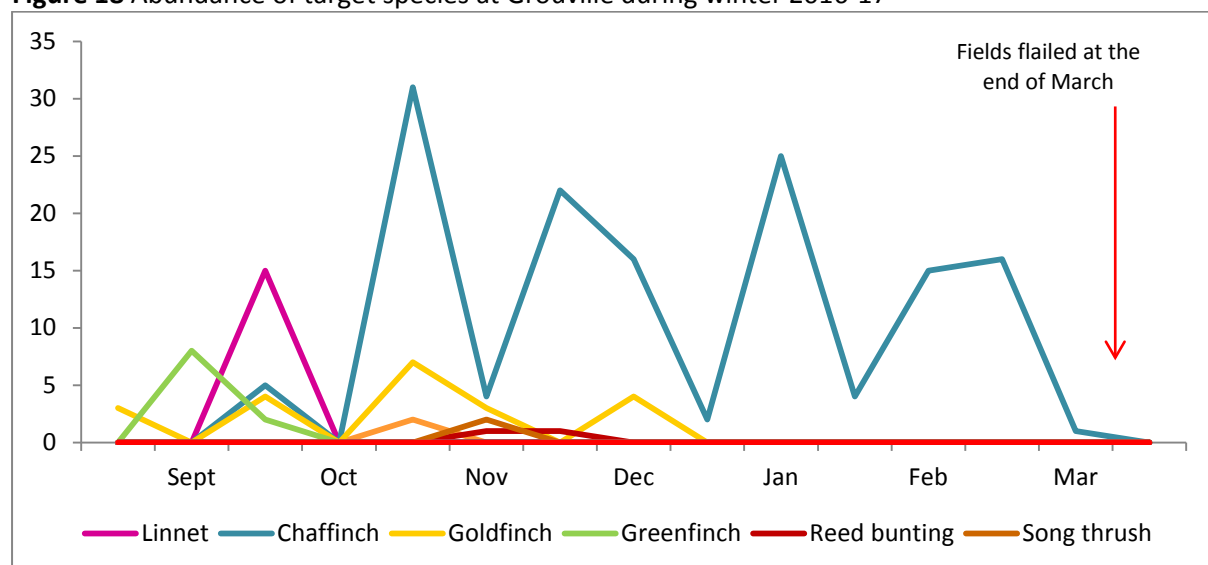
A total of 378 birds were recorded at this field during the winter surveys, of which 193 (51%) belonged to target species. Seven target species were recorded at the site, with Chaffinch being the most abundant (37.3%).

Table 14 Abundance of target species (in bold) recorded at Grouville

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	141	37.3	9.4	31	6.9
2	Dunnock	62	16.4	4.1	15	3.0
3	Wood Pigeon	28	7.4	1.9	12	1.4
4	Robin	26	6.9	1.7	4	1.3
5	Goldfinch	21	5.6	1.4	7	1.0
6	Great Tit	16	4.2	1.1	3	0.8
7	Linnet	15	4.0	1.0	15	0.7
8	Blackbird	14	3.7	0.9	2	0.7
9	Wren	13	3.4	0.9	8	0.6
9	Pheasant	13	3.4	0.9	12	0.6
10	Greenfinch	10	2.6	0.7	8	0.5
Other target species present						
13	Stonechat	2	0.5	0.1	2	0.1
13	Reed Bunting	2	0.5	0.1	1	0.1
13	Song Thrush	2	0.5	0.1	2	0.1

In similar fashion as the previous winter surveys recorded a variety of species, but a proportion of target birds lower than at other sites. Numbers were so low that the small fluctuations of Chaffinches through the winter appeared exacerbated at a very small-scale graph (Fig 18). A positive result was the observation of small groups of Linnets, a new species for the site, in two occasions at the newly added field.

Figure 18 Abundance of target species at Grouville during winter 2016-17



With only 10 birds/ha this was the site with the lowest density, lower also than the previous year (40.2 birds/ha). No birds were found at the site after the crop was flailed. The test against the control site showed no significant difference between them.

4.9.4 Discussion

Despite the low density of birds at the crop, the proximity of this site to the SSI and Trust land holds potential for many birds. Similar conclusions were reached the previous year, and the recommendation to plant more fields, in particular G234, was followed through. This had the unforeseen effect to attract small groups of Linnets, which are not usually seen at the SSI. Additionally, the new field is found close to the Grouville Common, home to the only population of Cirl Buntings and possibly where the Linnets came from. The scheme aims to offer winter food to the Cirl Buntings of the Common, so the observation of Linnets at the field, if they came from the Common, would be an encouraging sign.

4.9.5 Recommendations

- To continue planting and monitoring this site
- To plant more fields within or near the SSI and close to the Cirl Bunting breeding areas
- To maintain the flailing date as late as the farmer is comfortable with.

4.10 LA ROCQUE

4.10.1 Description

Found along La Rue du Pont near La Rocque Harbour, this field is framed by other commercial crops and hedgerows of varying qualities, from thick and tall hedges on the north-facing side to a sparse boundary with few tall shrubs and a water ditch. On the other side of the ditch there is a wet meadow used as a horse paddock or grazed by cows.

This site was included in the BOTE farmland scheme in 2015⁵, although its field had been planted with WBC for many years already. Ornithological and bird ringing records indicated that large flocks of various farmland species had been present at the crop in previous winters; with this evidence it was considered a priority to include this site in the BOTE's winter bird crop monitoring.

4.10.2 Crops

In 2016 the farmer added another one and a half fields of crops to the site, trebling the planted area to 1.51ha (8.39vg). Both fields share boundaries with the original field, and their boundaries comprise hedges, a line of poplars and a small orchard. Grass was planted on the areas of the fields that were left WBC-free.

The fields were planted during the second week of July. All three fields developed a tall and thick crop with a good representation of all plants. The margins of the main field were flailed mid-September for ditch maintenance. A small herd of cows was put in the WBC-free half of the main field to graze on the planted grass. A late site for potatoes, all fields were flailed and ploughed during the third week of March 2017.

Photos 26-29 Field G598 in August (top left) September (top right) October (bottom left) and November (bottom right)



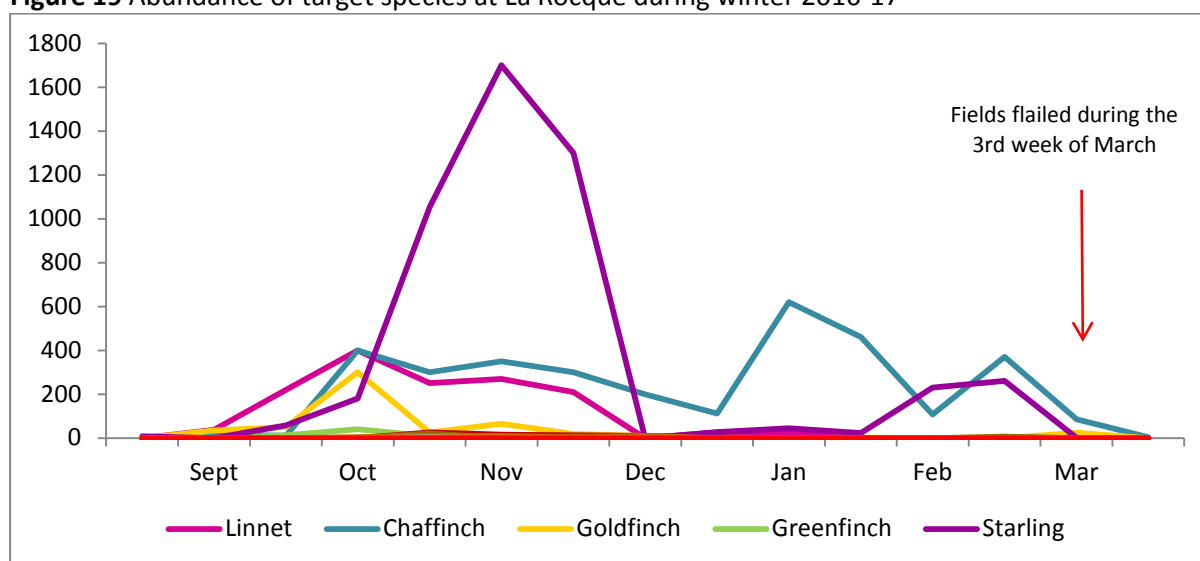
4.10.3 Birds

A total of 10,982 birds were recorded, of which 10,400 (95%) belonged to target species. This represented a net increase of 6,891 records over the previous. Thirteen target species were recorded at the site. For the first time the Starling was the most abundant species anywhere with 44.5% of the records, followed by Chaffinch with 30.4%.

Table 15 Abundance of target species (in bold) recorded at La Rocque

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Starling	4885	44.5	325.7	1700	215.7
2	Chaffinch	3335	30.4	222.3	620	147.2
3	Linnet	1436	13.1	95.7	400	63.4
4	Goldfinch	531	4.8	35.4	300	23.4
5	Carrion Crow	197	1.8	13.1	67	8.7
6	Barn Swallow	107	1.0	7.1	62	4.7
7	Reed Bunting	67	0.6	4.5	26	3.0
8	Robin	66	0.6	4.4	25	2.9
9	Greenfinch	61	0.6	4.1	40	2.7
10	Stock Dove	53	0.5	3.5	40	2.3
Other target species present						
11	Song Thrush	38	0.3	2.5	10	1.7
12	House Sparrow	34	0.3	2.3	21	1.5
20	Stonechat	6	0.1	0.4	2	0.3
22	Fieldfare	3	0.0	0.2	3	0.1
23	Skylark	2	0.0	0.1	2	0.1
24	Meadow Pipit	1	0.0	0.1	1	0.0
24	Brambling	1	0.0	0.1	1	0.0

Figure 19 Abundance of target species at La Rocque during winter 2016-17



The data shows several target birds were recorded at this site at various times, but only Chaffinch, Linnet and Goldfinch seemed to be there regularly. Many interesting birds were

also observed on the short grass planted next to the main field, including Little Egrets and Grey Herons. The vast majority of Starlings were also observed feeding in that field of grass, especially in November, before the cows were let in.

Following its own success, this site had the highest density of target birds for a second year running, with 492birds/ha – a slight increase from the previous winter.

4.10.4 Discussion

On the first year of standardised monitoring this site proved to be the most successful of all, attracting twice as many birds per hectare as any other site. The increase in planted area did not have the effect of ‘diluting’ the density, but on the contrary the net numbers increased dramatically (196%) and so did the density by a smaller fraction.

Last year it was noted that perhaps the abundance and diversity of birds was not affected by the lack of habitats in the vicinity such as coastal grassland, gorse or heathland. This could be due to the antiquity of the site, which has been planted consistently for at least the last 10 years, as well as the presence of the grazed paddock with a shrubby short hedge and the grass field. It could also indicate that in order to feed large numbers of farmland birds all that is required is a crop of good quality and thick hedges.

4.10.5 Recommendations

- As the most successful site in the scheme, it is paramount to continue planting winter bird crops and monitoring birds at the site
- It might be beneficial to trial other crops in the area such as barley, mustard or prickly potato, where WBCs are not feasible, with a management regime that would include cutting and leaving some of them in overwinter stubble.

4.11 LES CREUX

4.11.1 Description

This site was identified as a candidate for winter bird crops during the survey of the south-west coast in 2015, various management recommendations were proposed on the MP¹⁴. The area, found between Route Orange and Beauport Bay, comprises land owned and managed by the States of Jersey. There is also a public park, an orchard, arable fields, grazed pastures, mature woodland, wet meadows and gorseland at the cliffs overlooking Beauport Bay.

A large portion of States' own arable land is dedicated to various forms of wildlife conservation crops, mainly barley and phacelia, which are managed to encourage native plants such as the endangered purple viper's bugloss. An arable field was also ear marked to be left set aside from 2016 onwards and planted annually with a bird conservation crop. 2016 was the first year on winter bird crops trialled at this site.

4.11.2 Crops

The fields covered a combined area of 2.32ha (13vg), and were planted during the last week of May 2016. The crop was planted on four potato fields adjacent by Mont es Croix and on a section of a field usually planted with grass and grazed by cows, north-west of the other four fields.

The field in the north-west developed a small amount of sunflowers but mainly mustard and gold of pleasure. The other three fields as well as the most eastern field, in permanent conservation, suffered from an infestation of rogue millet and failed to develop most of the plants in the mix. The fields were flailed during the first week of February 2017.

Photos 30-33 Field G598 in August (top left) September (top right) October (bottom left) and November (bottom right)



4.11.3 Birds

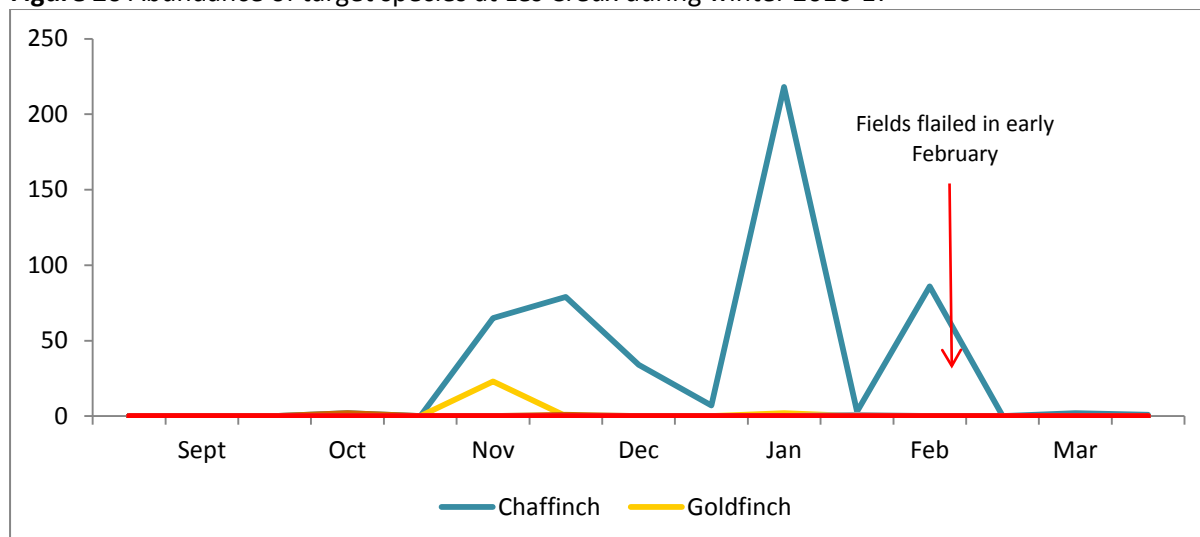
A total of 774 birds were recorded throughout the winter surveys, of which 526 (68%) belonged to target species. Four target species were recorded, with the Chaffinch being the most common bird at the site (64% of all records). Goldfinch, Song Thrush and Fieldfare were less abundant.

Table 16 Abundance of target species (in bold) recorded at Les Creux

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	497	64.2	33.1	218	14.3
2	Wood Pigeon	46	5.9	3.1	12	1.3
3	Robin	41	5.3	2.7	10	1.2
4	Great Tit	33	4.3	2.2	8	0.9
5	Carrion Crow	31	4.0	2.1	15	0.9
6	Goldfinch	25	3.2	1.7	23	0.7
7	Blackbird	22	2.8	1.5	4	0.6
8	Dunnock	21	2.7	1.4	5	0.6
9	Magpie	20	2.6	1.3	7	0.6
10	Stock Dove	7	0.9	0.5	7	0.2
Other target species present						
12	Song Thrush	3	0.4	0.2	2	0.1
14	Fieldfare	1	0.1	0.1	1	0.0

With 18.6 birds/ha Les Creux had a very low density of birds compared to the other sites, and it dropped to 1bird/ha after the fields were flailed.

Figure 20 Abundance of target species at Les Creux during winter 2016-17



The only species that was regularly observed at this site was Chaffinch, which declined markedly after the fields were flailed.

4.11.4 Discussion

The fact that this site did not attract many birds was disappointing. The crops did not develop in three of the four fields, and were overrun by rogue millet instead. Discussions with the farmer appeared to point to the fact that these fields struggled with crops of most kinds, and the winter bird crops were no exception. The lack of crop at this site would probably explain the lack of birds, but only with enough years of data from good and bad crops would it be possible to draw a conclusion.

The following recommendations were drafted in agreement with the farmer and the advice of the WBC producer, bearing in consideration that the quality and composition of the soil at this site might be compromised.

4.11.5 Recommendations

- To discontinue the planting of winter bird crops for the foreseeable future, and try instead a seed-bearing crop such as mustard or barley, which might present fewer development problems.

4.12 HOUGUE BIE

4.12.1 Description

Another site which has been planted in previous years by the Jersey Royal Company and monitored by ornithologists, it was included in the BOTE bird crops monitoring scheme in 2015⁵. The site comprises a single field along the Rue du Tapon, south from La Hougue Bie Museum, in the parish of St Saviour. The field is flanked by three hedges and a track alongside the northern boundary with hawthorn and bramble.

4.12.2 Crops

The field, of 2.43ha (13.5vg), was planted in mid-July 2016. The crop grew tall and thick with all components in the mix establishing well. The hedge of hawthorn and bramble on the north side was heavily trimmed at the beginning of February. The field was left standing until the end of the winter, and was flailed and ploughed at the end of March 2017.

Photos 34-37 Field S642 in August (top left) September (top right) and February (bottom left and right)

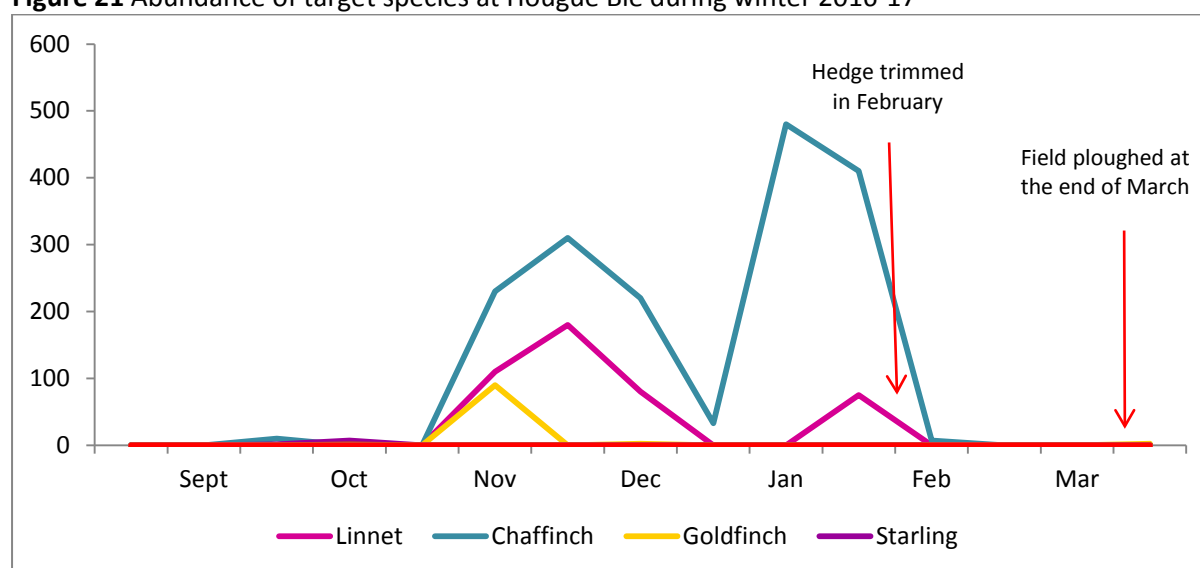


4.12.3 Birds

A total of 2,390 birds were recorded throughout the winter surveys, of which 2,248 (94%) belonged to target species. Five target species were recorded at the site, with Chaffinch, Linnet and Goldfinch being the most abundant of all (71%, 18.6% and 4% respectively).

Table 17 Abundance of target species (in bold) recorded at Hougue Bie

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	1700	71.1	113.3	480	46.6
2	Linnet	445	18.6	29.7	180	12.2
3	Goldfinch	94	3.9	6.3	90	2.6
4	Dunnock	34	1.4	2.3	15	0.9
5	Great Tit	23	1.0	1.5	11	0.6
5	Wood Pigeon	23	1.0	1.5	7	0.6
6	Barn Swallow	21	0.9	1.4	18	0.6
7	Robin	14	0.6	0.9	4	0.4
8	Starling	8	0.3	0.5	7	0.2
8	Wren	8	0.3	0.5	1	0.2
9	Blackbird	7	0.3	0.5	4	0.2
9	Carrion Crow	7	0.3	0.5	4	0.2
10	Pheasant	3	0.1	0.2	3	0.1
Other target species present						
11	Song Thrush	1	0.0	0.1	1	0.0

Figure 21 Abundance of target species at Hougue Bie during winter 2016-17

A small group of Goldfinch were observed at the site in November, whilst flocks of Chaffinch and Linnet were observed with regularity through the winter. Their numbers declined sharply mid-February, six weeks before the field was flailed, but shortly after the main hedge of bramble in the north was heavily trimmed. The site had a density of 66 birds/ha, falling below the average of that winter.

4.12.4 Discussion

This site was of moderate value to birds such as Chaffinches and Linnets. This might indicate a potential for higher numbers and more species, especially if the features at the site were enhanced or the planted area increased – or both.

It is not known whether the trimming of the northern hedge had an effect on bird numbers, but it cannot be ruled out, as numbers declined shortly after that event and not after the field was flailed six weeks later.

4.12.5 Recommendations

- To continue planting and monitoring this site
- To plant other fields in the vicinity with Winter Bird Crops, or with other bird-friendly crops such as barley, mustard or prickly potato, with the intention of cutting them after they mature to leave the field in stubble over the winter
- To encourage leaving the hedge uncut, or that it be cut at a later date.

4.13 FLICQUET

4.13.1 Description

This was a new site for 2016-17, and originated from a farmer's offer to plant a field in this area. The site was identified during the BOTE habitat surveys in the East Coast, and suggested as one of the conservation areas in the Area 4 Management Plan¹⁵. The proposed area comprises the land between St Catherine's Breakwater and La Coupe, both important arrival areas for migrating birds. The field has a line of trees to the north and a thick hedge on the western boundary, whilst a public footpath runs on its SW side towards La Route de St Catherine.

4.13.2 Crops

The crop developed successfully with tall and large sunflowers as well as the other components of the mix. In November, the farmer needed to add lime to the soil and thus flatten the crop. After a brief consultation it was decided that instead of flailing the whole field only strips would be flattened to be treated with lime, thus sparing strips of crop in rows. The strips were flailed on 28th November and monitoring continued at the site throughout the winter. What was left of the crop was flailed on 18th January 2017.

Photos 38-39 Field in August (left) and September (top right)



Photos 40-41 Strips of the field flailed on the 28th November 2016

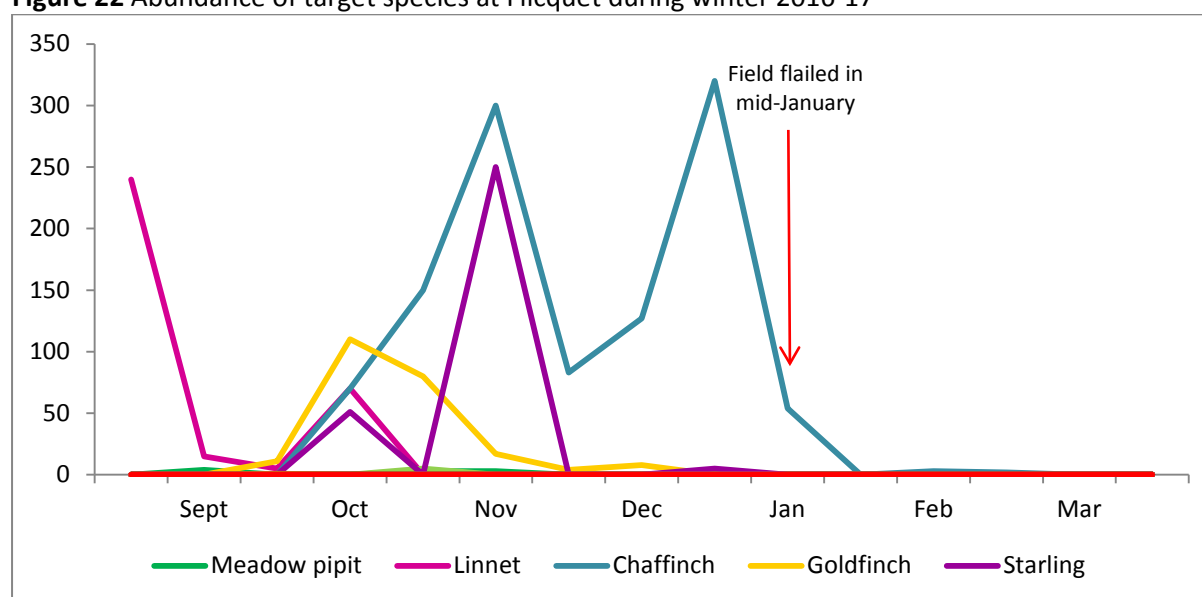


4.13.3 Birds

A total of 2,375 birds were recorded throughout the winter surveys, of which 1,993 (84%) belonged to target species. Seven target species were recorded at the site, with Chaffinch being the most abundant (74%) and followed by Linnet, Starling and Goldfinch.

Table 18 Abundance of target species (in bold) recorded at Flicquet

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	1111	46.8	74.1	320	58.3
2	Linnet	330	13.9	22.0	240	17.3
3	Starling	306	12.9	20.4	250	16.1
4	Goldfinch	230	9.7	15.3	110	12.1
5	Carrion Crow	158	6.7	10.5	43	8.3
6	Wood Pigeon	86	3.6	5.7	29	4.5
7	Robin	33	1.4	2.2	8	1.7
8	Wren	28	1.2	1.9	12	1.5
9	Dunnock	21	0.9	1.4	13	1.1
10	Great Tit	18	0.8	1.2	4	0.9
Other target species present						
13	Meadow Pipit	10	0.4	0.7	4	0.5
14	Greenfinch	5	0.2	0.3	5	0.3
16	Song Thrush	1	0.0	0.1	1	0.1

Figure 22 Abundance of target species at Flicquet during winter 2016-17

The first survey, carried out in mid-September, produced a couple of surprises in the form of a flock of 210 Linnets and a Common Whitethroat which was singing in the hedge of the western boundary. Linnets were recorded at lower numbers afterwards, whilst Chaffinch, Goldfinch and Starling increased and became more regular. Starlings and Goldfinches decreased towards the end of November, whilst Chaffinches remained in relative good numbers until the end of January.

A density of 101 birds/ha this site was just below the winter's average, decreasing considerably to 0.4 (99.6% decrease) after the field was flailed.

4.13.4 Discussion

As a newly established site this had a good first year, with a well-developed crop and a large flock of Linnets observed early on. Other farmland birds such as Chaffinch, Goldfinch and Starling also took to it and were observed in good numbers.

It was unfortunate that, for reasons outside the farmer's control, the field had to be treated with lime, which involved flattening the field. Thanks to some quick thinking, some of the winter bird crop was savaged when a compromise was reached to flatten and treat stripes of the field rather than its entire surface. It is not known if leaving the crop in strips had a negative effect on some birds, as it is thought that the height and structure provides cover from predators, but on the other hand it has been noted that a short crop attracts some birds that like to feed on the open and are well camouflaged, such as Meadow Pipits and Skylarks – although none were observed at the crop after the strips were cut.

4.13.5 Recommendations

- To continue planting and monitoring this site
- To plant other fields in the vicinity with Winter Bird Crops, or with other bird-friendly crops such as barley, mustard or prickly potato, with the intention of cutting them after they mature to leave the field in stubble over the winter.

4.14 QUEEN'S VALLEY

4.14.1 Description

This new addition to the scheme was originally identified during the survey of the east coast for the production of the BOTE Area 4 Management Plan¹⁵. The winter bird crop was implemented thanks to the interest of the land owner and the tenant farmer.

This site was considered of potential benefit to birds due to its location, to the east of Queen's Valley reservoir and close to Grouville Marsh SSI. The field is flanked by La Rue du Douetin to the west and Les Monts road to the east, with tall trees at both edges. The northern and southern boundaries do not have hedges. There is already a small WBC site near the SSI (found as 'Grouville' in section 4.9), and the various habitats in the area attract a large variety of birds, including wintering Reed Buntings. It was hoped that the field at Queen's Valley would offer further feeding opportunities to Reed Buntings as well as other target birds wintering in the marsh.

4.14.2 Crops

The field, of 1.1ha (6.1vg), was planted during the second week of July 2016. The crop developed all the plants in the mix with especially tall mustard and sunflowers. The field was flailed at the end of February. The adjacent fields were planted with a grass crop.

Photos 42-43 Field G24B in August (left) and October (right)



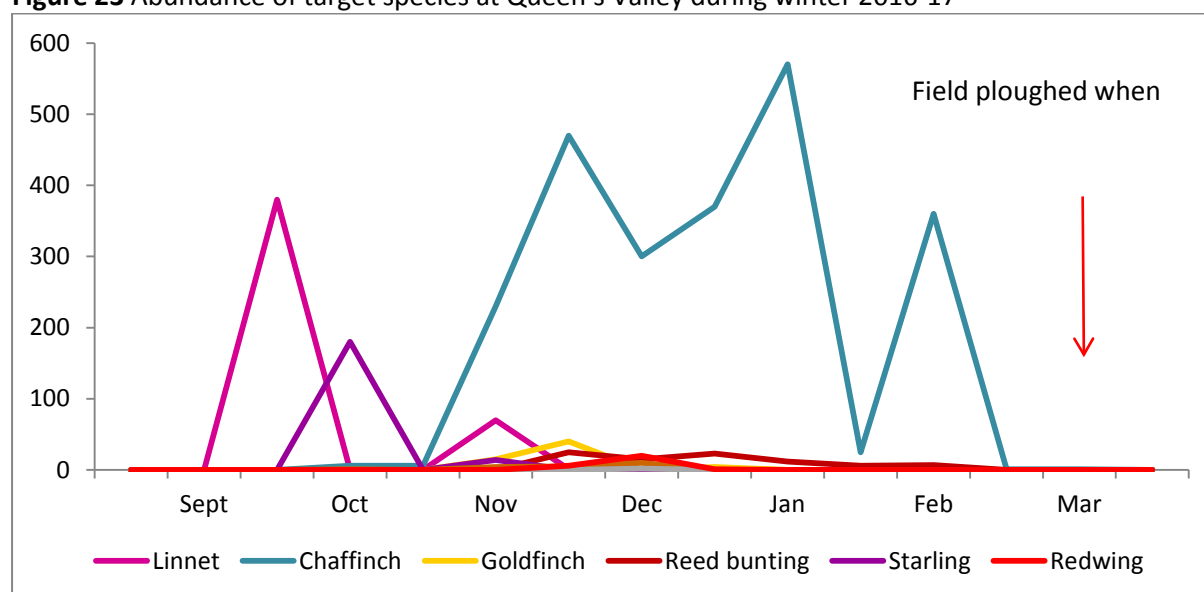
4.14.3 Birds

A total of 3,354 birds were recorded throughout the winter surveys, of which 3,183 (95%) belonged to target species. Nine target species were recorded at the site, with Chaffinch the most abundant (67%) followed by Linnet (30%), Starling (13%), Reed Bunting (6%) and Goldfinch (4%).

Table 19 Abundance of target species (in bold) recorded at Queen's Valley

Top 10	Species	n	%	Average per survey	Max N on survey	Density (n/ha)
1	Chaffinch	2339	69.7	155.9	570	141.8
2	Linnet	451	13.4	30.1	380	27.3
3	Starling	194	5.8	12.9	180	11.8
4	Reed Bunting	88	2.6	5.9	25	5.3
5	Goldfinch	59	1.8	3.9	40	3.6
6	Stock Dove	39	1.2	2.6	22	2.4
7	Redwing	27	0.8	1.8	20	1.6
7	Wood Pigeon	27	0.8	1.8	7	1.6
8	Carrion Crow	25	0.7	1.7	12	1.5
9	Song Thrush	20	0.6	1.3	10	1.2
10	Robin	19	0.6	1.3	4	1.2
Other target species present						
15	Greenfinch	3	0.1	0.2	2	0.2
16	Fieldfare	2	0.1	0.1	2	0.1

Apart from Chaffinches, which were consistently recorded, this site also attracted many other target species such as Linnets, Starlings and Reed Buntings. As the crop grew, the flowers attracted vast quantities of invertebrates and Barn Swallows were observed towards the end of September feeding above the crop. Reed Buntings were observed at the crop for the first time on 7th December, and were observed regularly until mid-February, right before the crop was flailed. Chaffinches also disappeared shortly after the field was flailed. Next to the winter bird crop, the grass field was cut early in the winter season and a large flock of 380 Linnets was observed feeding on it.

Figure 23 Abundance of target species at Queen's Valley during winter 2016-17

This field had the second highest density of all sites: 241 birds/ha. After it was flailed, it dropped to 0.6, a 99.7% decrease.

4.14.4 Discussion

When this site was proposed as a winter bird crops, it was hoped that it would attract a moderate number of farmland birds, but especially Reed Buntings, in order to reduce their commute from the roosting reed beds of Les Maltières to their feeding sites across the Island. When the first Reed Buntings were observed at the crop it was a positive result, but perhaps the bigger surprise was the data analysis showing the second highest density of all fourteen sites.

This represented a great start for this site, and although one year's data might not be representative, the results fit in with the rationale behind the choice of this site. It is hoped that further years of crops and monitoring will confirm this site's importance for farmland birds in the east of the Island.

4.14.5 Recommendations

- To continue planting and monitoring this site
- To restore some of the hedges on the north and south side of the field. To plant other fields in the vicinity with Winter Bird Crops, or with other bird-friendly crops such as barley, mustard or prickly potato, with the intention of cutting them after they mature to leave the field in stubble over the winter.

5. FINAL CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

- In 2016 a total of 41.1ha (228vg) were planted with winter bird crops at 14 sites, representing a 31.5% increase in land planted. Most fields were planted within the recommended timeframe and developed successfully in height, structure and seed
- The winter bird crops provided a source of food to many birds, with an average density of 115birds/ha. The evidence indicated that numbers declined sharply after the fields were ploughed, except for one site where numbers declined after a hedge was flailed
- 45,720 birds were recorded in total, representing a net increase of 3,550 records (9%) from the previous year. The overall density, which is an average calculated across all sites and including the densities after the fields are ploughed, decreased by 14%
- The most abundant target species were Chaffinch, Starling, Linnet, Goldfinch and Reed Bunting. Other species present were Greenfinch, Skylark, Meadow Pipit, Stonechat and Song Thrush. An increase in Starlings and Reed Buntings was a positive outcome - the Starling is in the Jersey RedList and the Reed Bunting could potentially breed in Jersey. One European Serin was recorded for the first time at one of the sites. As a farmland bird in the Jersey RedList, this species could be considered a project target. Other species featured in the Jersey RedList observed at the winter bird crops were Sedge Warbler and Bullfinch (red classification); House Martin, Sand Martin, Cetti's Warbler and White Wagtail (amber classification).
- The sites with the highest numbers of birds were La Rocque and Queen's Valley. It is believed that the success of La Rocque is down to its antiquity and thick hedgerows, and that Queen's Valley is in a very favourable location between Grouville Marsh, the reservoir and Victoria Tower.

5.2 Recommendations

- 1) To plant winter bird crops at all sites with the exception of Les Creux
- 2) To increase the planted area of the existing sites when possible, especially at the smallest sites and at the sites with the highest bird densities
- 3) To continue planting the winter bird crops at the times recommended by the seed producer and to leave the crops standing until late February-March
- 4) To adapt the type of crop and management to single species when necessary, such as cereals or stubbles for Cirl Buntings, Yellowhammers, Skylarks or Reed Buntings
- 5) To continue monitoring the crops and birds at the WBC sites for the foreseeable future.

6. REFERENCES

1. Young, H.G., Dryden, M. and Pinel, J. 2011. *Conservation Status of Jersey's Birds: Jersey's Bird Populations in the 21st Century*. Durrell Wildlife Conservation Trust, Jersey.
2. Donald, P.F., Green, R.E. and Heath, M.F. 2001. Agricultural intensification and the collapse of Europe's farmland bird populations. *Proceedings of the Royal Society of London, Series B, Biological Sciences* 268: 25-29.
3. Phillips, J., Willmott, M. and Grice, P. 2013. Delivering the HLS Package for Farmland Birds. Advisory note for Natural England advisers. Natural England.
4. Sellarés, C. 2014. *Conservation crops: A source of winter food for farmland birds in Jersey. Results of the 2013 trial scheme*. Birds On The Edge, Jersey.
5. Sellarés, C. 2016. *2015-16 Winter Bird Crops Report*. Birds On The Edge, Jersey.
6. RSPB Volunteer & Farmer Alliance <http://www.rspb.org.uk/ourwork/farming/vandfa/>
7. Gillins, S. Wilson, A.M., Conway, G.J., Vickery, J.A., Fuller, R.J., Beavan, P., Newson, S.E., Noble, D.G. and Toms, M.P. 2008. Winter Farmland Bird Survey. BTO Research Report No. 494.
8. Wilson, J.D., Taylor, R. and Muirhead, L. B. 1996. Field use by farmland birds in winter: an analysis of field type preferences using resampling methods. *Bird Study* **43**: 320-332.
9. Sellarés, C. 2015. *2014-15 Winter Bird Crops Report*. Birds On The Edge, Jersey.
10. Sellarés, C. 2013. *Birds On the Edge Area 1 Management Plan*.
11. Sellarés, C. 2014. *Conservation crops: A source of winter food for farmland birds in Jersey. Results of the 2013 trial scheme*. Birds On The Edge, Jersey.
12. Sellarés, C. 2014. *Operation Hungry Gap. Results of the 2014 trial supplementary feeding station*. Birds On The Edge, Jersey.
13. Sellarés, C. 2015. *Birds On The Edge Area 2 Management Plan*.
14. Sellarés, C. 2016. *Birds On The Edge Area 3 Management Plan*.
15. Sellarés, C. 2017. *Birds On The Edge Area 4 Management Plan*.

APPENDIX I. Common and scientific names of species

** Species found at WBC sites*

Greylag Goose *	<i>Anser anser</i>
Tufted Duck	<i>Aythya fuligula</i>
Common Pheasant *	<i>Phasianus colchicus</i>
Little Egret *	<i>Egretta garzetta</i>
Grey Heron *	<i>Ardea cinerea</i>
Little Grebe	<i>Tachybaptus ruficollis</i>
Western Marsh Harrier *	<i>Circus aeruginosus</i>
Eurasian Sparrowhawk *	<i>Accipiter nisus</i>
Common Buzzard *	<i>Buteo buteo</i>
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>
Northern Lapwing *	<i>Vanellus vanellus</i>
Common Snipe *	<i>Gallinago gallinago</i>
Stock Dove *	<i>Columba oenas</i>
Common Wood Pigeon *	<i>Columba palumbus</i>
Eurasian Collared Dove *	<i>Streptopelia decaocto</i>
Common Swift	<i>Apus apus</i>
Great Spotted Woodpecker *	<i>Dendrocopos major</i>
Common Kestrel *	<i>Falco tinnunculus</i>
Merlin *	<i>Falco columbarius</i>
Peregrine Falcon *	<i>Falco peregrinus</i>
Red-billed Chough *	<i>Pyrrhocorax pyrrhocorax</i>
Eurasian Magpie *	<i>Pica pica</i>
Eurasian Jay *	<i>Garrulus glandarius</i>
Western Jackdaw *	<i>Corvus monedula</i>
Carrion Crow *	<i>Corvus corone</i>
Northern Raven *	<i>Corvus corax</i>
Common Firecrest *	<i>Regulus ignicapilla</i>
Eurasian Blue Tit *	<i>Cyanistes caeruleus</i>
Great Tit *	<i>Parus major</i>
Eurasian Skylark *	<i>Alauda arvensis</i>
Sand Martin	<i>Riparia riparia</i>
Barn Swallow *	<i>Hirundo rustica</i>
Common House Martin	<i>Delichon urbicum</i>
Cetti's Warbler *	<i>Cettia cetti</i>
Long-tailed Tit *	<i>Aegithalos caudatus</i>
Common Chiffchaff *	<i>Phylloscopus collybita</i>
Eurasian Blackcap *	<i>Sylvia atricapilla</i>
Common Whitethroat *	<i>Sylvia communis</i>
Dartford Warbler *	<i>Sylvia undata</i>
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>
Eurasian Wren *	<i>Troglodytes troglodytes</i>
Common Starling *	<i>Sturnus vulgaris</i>
Common Blackbird *	<i>Turdus merula</i>
Fieldfare *	<i>Turdus pilaris</i>
Song Thrush *	<i>Turdus philomelos</i>

Redwing *
European Robin *
Whinchat *
European Stonechat *
Northern Wheatear *
Duncock *
House Sparrow *
Yellow Wagtail *
Pied Wagtail/White Wagtail *
Meadow Pipit *
Eurasian Rock Pipit
Brambling *
Common Chaffinch *
Eurasian Bullfinch *
European Greenfinch *
Common Linnet *
European Goldfinch *
European Serin *
Cirl Bunting
Yellowhammer
Common Reed Bunting *

Turdus iliacus
Erithacus rubecula
Saxicola rubetra
Saxicola rubicola
Oenanthe oenanthe
Prunella modularis
Passer domesticus
Motacilla flava
Motacilla alba
Anthus pratensis
Anthus petrosus
Fringilla montifringilla
Fringilla coelebs
Pyrrhula pyrrhula
Chloris chloris
Linaria cannabina
Carduelis carduelis
Serinus serinus
Emberiza cirrus
Emberiza citrinella
Emberiza schoeniclus