Report on the outcome of the autumn 2016 finch live-capturing season in Malta

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Ministry for Sustainable Development, the Environment and Climate Change

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1. INTRODUCTION

1.1 This report provides full account of the outcome of the derogation allowing a live-capturing season for seven finch species in Malta during Autumn 2016. It has been compiled in addition to Malta's formal derogation report submitted annually pursuant to Malta's reporting obligation under Article 9 of Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009, on the Conservation of Wild Birds (hereinafter the Birds Directive). In this regard, this report considers various relevant aspects of the application of this derogation, including:

- an assessment of the conservation status of the seven finch species: Common Linnet (*Linaria cannabina*), European Goldfinch (*Carduelis carduelis*), European Greenfinch (*Chloris chloris*), Eurasian Siskin (*Spinus spinus*), Hawfinch (*Coccothraustes coccothraustes*), Common Chaffinch (*Fringilla coelebs*) and European Serin (*Serinus serinus*);

- the decision-making process leading up to the decision to apply derogation;

- the special licensing process undertaken prior to application of derogation;

- the reported catches by the licensed live-capturers through a real-time game reporting system;

- the enforcement efforts in place to ensure the strict supervision of live-capturing during the season;

- the illegalities detected and corresponding enforcement action taken; and,

- the legal and other management aspects of relevance.

2. LEGAL AND POLICY BASIS FOR THE APPLICATION OF A DEROGATION PERMITTING AN AUTUMN FINCH LIVE-CAPTURING SEASON IN 2016

GENERAL BACKGROUND

2.1 Traditional live-capturing (alternatively referred to as 'trapping') of seven species of finches, namely Chaffinch (*Fringilla coelebs*), Linnet (*Linaria cannabina*), Goldfinch (*Carduelis carduelis*), Greenfinch (*Chloris chloris*), Hawfinch (*Coccothraustes coccothraustes*), Serin (*Serinus serinus*), and Siskin (*Spinus spinus*) is a deeply-rooted traditional practice in Malta that represents significant socio-cultural value for a sizeable proportion of Maltese population. This practice consists of several elements, including preparation of the capturing site, meticulous husbandry of live-decoys, targeted capturing of finch specimens and their subsequent husbandry and keeping for various recreational purposes.

2.2 Prior to Malta's accession to the EU, this long-standing practice of live-capturing was virtually unregulated: trapping took place between September and May, without any temporal or spatial restrictions and without any bag limits or quotas.

2.3 Prior to its accession to the EU in 2004, Malta examined the possibility of allowing the live-capturing, including the keeping for recreational purposes of the seven finch species within the framework of EU law. During pre-accession negotiations with European Commission in 2001, Malta suggested including the seven species of finches in Annex II/2 of EU Birds Directive.

2.4 This proposal was however rejected. Instead, the Commission proposed to grant Malta a transitional period during which it had to implement a series of measures aimed at establishing a potential alternative solution to the unrestricted live-capturing of the said species, in the form of a captive breeding programme. This captive breeding programme would purportedly allow the limited capture of finches from the wild, to the extent that their capture was necessary to ensure genetic diversity of the captive-bred species (i.e. a consanguinity-related derogation).

2.5 Malta accepted this proposal on the understanding that even under the breeding programme, the limited live-capture of finches would still be necessary and permissible to ensure sufficient genetic diversity. The

proposal was then crystallised in Malta's Act of Accession, which granted Malta a transitional derogation from the general protection regime of the Directive, outside of the framework of Article 9 of the Birds Directive.

2.6 In December 2008, the transitional period granted to Malta came to an end and the practice of finch live-capturing was terminated. On the basis of the various assessments conducted[1], Malta reached the conclusion that the transitional measures could not provide a satisfactory alternative solution for both the capturing and the keeping of finches.

2.7 Between 2004 and 2014, Malta conducted a series of in-depth assessments of the results of captive breeding, as well as of various other potential alternatives (such as ring and release schemes, live-capturing of other species, the continuation of the ban on finch capturing and keeping). In 2014, it was concluded that no other satisfactory solution exists except by virtue of a derogation within the parameters of Article 9(1)(c) of the Birds Directive.

2.8 A derogation regime was subsequently drafted following several months of debate with stakeholders and a series of in-depth legal, technical and scientific assessments. This derogation did not aim to continue or re-instate the finch live-capturing practice as it was exercised prior to 2004, nor did it entail a consanguinity-related derogation.

2.9 Following a detailed legal assessment, coupled with consideration of related technical and legal analyses, as well as following advice from the Malta Ornis Committee, in 2014 the Maltese Government decided to apply a derogation under Article 9 of the Birds Directive allowing live-capturing (trapping) of the seven species of finches in Malta.

2.10 To this effect, on 15 July 2014, the Government published a legislative package consisting, *inter alia*, of a new Framework Regulation (Legal Notice 253 of 2014[2]) establishing the parameters for live-capturing derogations for finches in Malta, and of another legal instrument (Legal Notice 250 of 2014[3]) declaring the opening of the 2014 live-capturing season for finches in

[1] These assessments and other technical and scientific information is summarised in a Technical Memorandum, annexed with Malta's report on the outcome of the 2014 finch live-capturing derogation. This report and its annexes are available online under the following link: http://environment.gov.mt/en/Pages/WBRU/livecapturingder.aspx

[2] S. L. 504.124, available at: http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12211&l=1

[3] S. L. 504.122, available at: http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12209&l=2

accordance with the above-mentioned new Framework Regulations and in line with the recommendations of the Malta Ornis Committee.

2.11 The decision of the Maltese Government allowing a finch live-capturing derogation in 2014 was preceded by a series of bilateral meetings held between the Commission services and the Maltese authorities. The decision-making process, the contents of the legislation adopted in 2014 and other relevant aspects were presented as part of Malta's report on the application of derogation in 2014[4]. These will not be re-stated in this report.

LEGAL BASIS – THE EU BIRDS DIRECTIVE, APPLICABLE JURISPRUDENCE AND POLICY

2.12 The legal basis for the application of the autumn finch live-capturing derogation is provided by Article 9(1)(c) of the Birds Directive, which states that "Member States may derogate from the provisions of Articles 5 to 8, where there is no other satisfactory solution…", "to permit, under strictly supervised conditions and on a selective basis, the capture, keeping or other judicious use of certain birds in small numbers".

2.13 Prior to deciding to derogate, the Government ascertained that the above elements of Article 9 (1) (c) have been met as follows:

No other satisfactory solution

2.14 Prior to the decision to apply the finch live-capturing derogation, Malta meticulously assessed all potential alternatives, which were implemented in practice between 2004 and 2014, and in doing so it strictly followed the requirements of Article 9(1) of the Directive and the Commission's guidance document thereon[5]. In carrying out this assessment, the Maltese authorities followed strictly the methodology prescribed in the Commission's Guide to Sustainable Hunting[6], resulting in: i) the identification and definition of the precise problem for which a solution is being sought; ii) the identification of potential alternative solutions to the said problem; iii) ascertaining the applicability of Article 9 of the Directive to such alternative solutions; and iv) subjecting potential alternative solutions to the "satisfactory solution test".

[4] ibid

[5] European Commission, *Guide to Sustainable Hunting under the Birds Directive* (2008), para 3.4.2 ; available at http://ec.europa.eu/environment/nature/conservation/wildbirds/hunting/docs/hunting_guide_en.pdf

[6] ibid, Section 3, pp. 41 - 69

2.15 The alternatives considered in this analysis included: (1) an assessment of the ban on finch live-capturing that was in force between 2009 and 2014; (2) an assessment of the results attained from the de-centralised and the centralised captive breeding programmes that were implemented between 2005 and 2010; (3) an assessment of the potential of ring-and-release and similar programmes such as those promoted through the EU-funded LIFE project on Bird Migration and Trapping[7] implemented between 2009 and 2011; and (4) an assessment of the potential for live-capturing of species other than finches[8].

2.16 This assessment is presented in detail in the Technical Memorandum, annexed with Malta's report on the outcome of the 2014 finch live-capturing derogation[9]. Through this exercise the Maltese authorities concluded that, taking into account the unique socio-cultural context and the biogeographical circumstances of the Maltese Islands, as well as the practical experience gained in the implementation of all other potential alternative activities – including, but not limited to, the captive breeding programme – none of the alternatives assessed, except for a limited, strictly controlled and supervised live-capturing derogation for finches, would provide a satisfactory alternative solution to the long-standing traditional and recreational practice of live-capturing and keeping of the seven finch species.

Judicious Use

2.17 According to Article 9 (1) (c) of the Directive, both "capturing" and "keeping" elements of the derogation may qualify as "judicious use", since the Article provides that Member States may "…permit, under strictly supervised conditions and on a selective basis, the capture, keeping or other judicious use of certain birds in small numbers"[10]. In this regard, reference may be made to the judgment of the Court in Case C-60/05 WWF Italia[11] and in Case C-76/08 Commission v Malta[12], where the Court of Justice explicitly confirmed that hunting – of non-Annex II species in the first case – for purely recreational or leisure purposes can fulfil the conditions of Article 9(1)(c), including notably the criterion of "judicious use", without the need for

[7] LIFE07 INF/MT/000554.
[8] such as the live-capturing derogation for Golden Plover and Song Thrush.
[9] Technical Memorandum, Part B, pages 1-7
[10] Emphasis added.
[11] EU:C:2006:378
[12] EU:C:2009:535.

any other 'final use' of the birds in question to be identified or invoked. Similarly, in Case C-507/04 Commission v Austria the Court held that: "the hunting of wild birds for recreational purposes during the periods mentioned in Article 7(4) of the Directive may, subject to compliance with the requirements laid down in Article 9(2), constitute a 'judicious use' within the meaning of Article 9(1)(c) (see, to this effect, *Ligue pour la protection des oiseaux sauvages and Others*, paragraph 11)."[13]

2.18 This reasoning therefore applies with even greater force to live-capturing activities which, by definition, do not involve the killing of birds. In such a context, the term "judicious use" applies to both the activity of live-capturing and to the subsequent keeping of birds in captivity, which, on the basis of the case-law cited, may both be practiced for purely recreational reasons. Conversely, if under certain circumstances, the removal of a bird from the wild may be considered "judicious" in the first place, then it logically follows that its subsequent use is also judicious.

2.19 In Malta's case, caught birds are tended and cared for meticulously by live-capturers, which enables them to thrive and survive longer in captivity, when compared to birds in the wild. Selective capture and keeping of certain species with a healthy conservation status, in the absence of another satisfactory solution and in small numbers, can be judicious. The only distinction which the Directive makes with regard to different bird species can be found in Article 7, which permits the hunting of Annex II birds within the conditions established therein, whereas Article 5 in principle prohibits the hunting of any other species. However the non-inclusion of a species in Annex II to the Directive does not in principle affect the assessment of the validity of a derogation from Article(s) 5 (and 8), pursuant to Article 9(1)(c).

2.20 Moreover, the Court has formally "accepted the possibility of derogating from the prohibition on hunting species of birds not listed in Annex II to the Directive, to which Article 7(1) refers, in particular for the reason set out in Article 9(1)(c) of the Directive".[14]

2.21 Thus the Court in Case C-60/05 WWF Italia[15] acknowledged that the hunting in Italy of the Chaffinch (*Fringilla coelebs*) and Brambling (*Fringilla montifringilla*) – both non-Annex II species – for purely recreational purposes

[13] EU:C:2007:427, paragraph 197
[14] Case C-182/02 *Ligue pour la protection des oiseaux and Others v. France,* EU:C:2003:558, para.10.
[15] EU:C:2006:378.

could benefit from a derogation under Article 9(1)(c), provided it satisfied all the conditions stipulated therein. In that judgment the Court cited the principle, now echoed in the Commission's Guide to Sustainable Hunting,[16] that: "…'small numbers' are any sample of less than 1% of the total annual mortality rate of the population in question (average value) for those species which are not to be hunted and a sample in the order of 1% for those species which may be hunted…"[17] This confirms the statement in the AG's Opinion in that same case, namely that: "In accordance with the case-law of the Court, it is possible to derogate from the prohibition on hunting bird species not listed in Annex II to the Directive, to which Article 7(1) refers, in particular, on the grounds mentioned in Article 9(1)(c) of the Directive. Therefore, the hunting of wild birds for recreational purposes may constitute a judicious use authorised by Article 9(1)(c) of the Directive".[18]

Selectivity

2.22 The clap-net method of capture, authorised for the finch live-capturing derogation allows the capture on a selective basis because the nets are manually operated by trained and licensed[19] live-capturers, who were required to pass a special examination that includes a rigorous bird identification test[20]. Moreover, the nets can only be triggered through direct human intervention when the operator physically activates the clap-net to momentarily close in on a bird that has been visually identified by the live-capturer within the range of the net. The use of this kind of net rules out the possibility of accidental or non-selective capture of any species other than the authorised species.

2.23 In the unlikely event that such a by-catch occurs, the live-capturer has a clear legal obligation[21] to immediately release such bird unharmed. Moreover, given that the Maltese finch live-capturer is generally disinterested in non-target species, any by-catch is in practice invariably released back into the wild. The law furthermore explicitly prohibits the use

[16] Commission Guide to Sustainable Hunting under the Birds Directive, p. 62, paragraph 3.5.36
[17] ibid, paragraph 26. See similarly Case C-344/03 *Commission v Finland,* EU:C:2005:770, para. 53
[18] Opinion of AG Geelhoed issued on 16 February 2006 in Case C-60/05 *WWF Italia,* EU:C:2006:116, para. 25
[19] See specimen 2015 finches special live-capturing licence (Annex II)
[20] A visual illustration of the selective operation of clap nets method and other relevant factors can be seen in the video produced by the Maltese authorities and available under the following link: http://environment.gov.mt/en/Pages/WBRU/livecapturingder.aspx or https://www.youtube.com/watch?v=JNeUFfX6Uqc
[21] Regulation 7 (p) of subsidiary legislation 549.93

of non-selective devices that are active at all times, without direct human intervention[22].

2.24 The deliberate targeting of any species other than the authorised finch species is expressly prohibited by Maltese law[23] and is subject to large penalties. The penalty for such an offence involving protected birds listed in Schedules I or IX of the Conservation of Wild Birds Regulations (SL 549.42) on first conviction is a minimum €5,000 fine, permanent revocation of the licence and 12 months imprisonment; whilst for a second or subsequent offence the minimum penalty is a €10,000 fine, 24 months imprisonment and a life-time ban from obtaining any hunting and live-capturing licences[24].

Small numbers

2.25 The approach followed by the Maltese authorities in estimating the criterion of "small numbers" in relation to the seven finch species at issue relied on the principles and methodology provided in Commission's Guide to Sustainable Hunting under the Birds Directive. As a result, the bag limits of the derogation, provided for under Schedule II of S.L. 549.93, were set at levels that are significantly less than the 1% of annual mortality threshold, which the Commission recommends for estimation of "small numbers" in relation to non-Annex II species. This is further elaborated in the subsequent sections of this report.

Strict supervision

2.26 A strict supervisory and enforcement regime that comprises an elaborate system of legal and regulatory controls and deterrents against violations, as well as a robust field enforcement system on the ground, have been put into place. The details of the strict supervision regime are further elaborated in the subsequent sections of this report.

APPLICABLE PROVISIONS OF NATIONAL LAW

2.27 The Conservation of Wild Birds Regulations (S.L. 549.42) is the main legal instrument which transposes the Birds Directive. The following provisions of these Regulations are of particular relevance:

[22] Regulation 7(g) of subsidiary legislation 549.93
[23] Regulation 7(o) of subsidiary legislation 549.934
[24] Regulation 27(2) of the Conservation of Wild Birds Regulations (SL 504.71)

- Regulation 2 defines, *inter alia*, the geographical areas where live-capturing is prohibited.

- Regulation 8 prohibits any live-capturing of wild birds, except where authorised through the derogation regime prescribed in Regulation 9, and lays down other conditions pertaining to any licences that may be issued pursuant to any live-capturing derogation regime.

- Regulation 9 lays down parameters for consideration of any derogations, essentially transposing the corresponding provision (Article 9) of the Birds Directive. However the national Regulation goes further, by prescribing the precise decision-making procedure that must be followed in the course of consideration of any such derogation, which includes a mandatory consideration by the Malta Ornis Committee.

- Regulation 10 prescribes the role of the Malta Ornis Committee, which includes an array of specific functions, including under sub-regulation 10(6)(c) the function "to make recommendations to the Minister on the authorization of derogations from the provisions of regulations 4,5,6,7,18 and 21" and "to verify at regular intervals that the conditions governing the granting of such authorization or authorizations continue to be fulfilled". The fourth proviso to the same sub-regulation furthermore prescribes in detail the powers of the Minister, upon considering recommendations of the Committee, to decide on whether to authorize derogations, as well as the mandatory obligation upon the Minister to state in writing reasons for his decision where substantial divergence exists between the Committee's recommendations and the Minister's decision.

- Regulation 11 provides the Wild Birds Regulation Unit with a range of legal powers to enforce provisions of these regulations in conjunction with the Police.

- Regulation 27 prescribes the manner in which offences under these Regulations are to be dealt with, and provides for an array of punishments that, in the case of breaches under derogations, range from a minimum of €500 fine and immediate revocation of the special licence, to €15,000 fine, two years imprisonment, revocation of all licences issued under these regulations for life, as well as the confiscation of corpus delicti. Regulation

27 also provides for a set of gravity factors which the judiciary takes into consideration in determining the seriousness of the offence and the applicable level of penalty.

- The Conservation of Wild Birds (Framework for Allowing a Derogation Opening an Autumn Live-Capturing Season for Finches) Regulations, 2014 (S.L.549.93[25]), hereafter referred to as the 'Framework Regulations' empowers the Minister, provided that there is no satisfactory solution in terms of Article 9(1) of the Birds Directive, to open an Autumn live-capturing season for the seven finch species by means of a notice in the Government Gazette. According to these regulations, an Autumn live-capturing season may only be opened for a maximum period of seventy-three days from October to December of the same year with a maximum bag limit for any season of 12,000 Linnets, 800 Goldfinches, 4,500 Greenfinches, 2,350 Siskins, 500 Hawfinches, 5,000 Chaffinches and 2,350 Serins. The Framework Regulations further provide the criteria for eligibility for a special licence for live-capturing and set a procedure for the application stage, including an application fee, and the conditions that are to be included in the licence issued. These Regulations also establish the means of capture, that is, by means of traditional clap nets on sites that had been previously approved by the Wild Birds Regulation Unit and registered with the Commissioner of Police. The Regulations also stipulate a special licensing requirement and a set of binding special licence conditions which include, *inter alia*:

    - The dates and permitted hours of the season;
    - Provisions related to location and configuration of live-capturing sites and live-capturing stations;
    - Restrictions pertaining to mesh size to be used, the maximum footprint of each live-capturing station (maximum of 38 square metres for a pair of clap nets);
    - Provisions related to authorised method of capture and prohibition for leaving armed nets during hours when live-capturing is not permitted;
    - Seasonal and individual bag limits (10 birds of the relevant species per licensee);

[25] S.L. 549.93 available at: http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12211&l=1

- Requirements concerning the use of live decoys (maximum of 21 live decoys per live-capturing site; all decoys must be ringed with a special single-use ring supplied by the Wild Birds Regulation Unit);
- Requirement to immediately ring with a single-use ring provided by the Unit, and report birds caught through telephonic game reporting system;
- Requirement to immediately report any scientific ring recoveries and to immediately release birds fitted with scientific ring;
- Requirement to immediately release birds not of the relevant species should accidental capture occur;
- Requirement to immediately release birds that may be accidentally caught over one's bag limit;
- Requirement to keep relevant documentation, including approved site plans, General License, Special Licence and ID Card at all times whilst practicing live-capturing activity or travelling to and from live-capturing site;
- Restrictions pertaining to permitted size of cages in which birds can be kept during live-capturing activity, and other restrictions and prohibitions.

2.28 In addition to these conditions, licensed live-capturers were also to abide with the provisions laid down in the Conservation of Wild Birds Regulations (S.L. 549.42).

2.29 Offences against any provision of the Special Licence are subject to harsh penalties envisaged in Regulation 27 of the Conservation of Wild Birds Regulations (S.L. 549.42). Except where the offence consisted solely of an administrative or minor violation listed in Schedule VIII of the said Regulations, any other offences or breaches of licence conditions trigger automatic seizure of Special and General Licences, seizure of rings, birds and equipment prior to criminal proceedings being initiated in terms of Regulation 27.

2.30 Conservation of Wild Birds (Declaration on a derogation for a 2016 Autumn live-capturing season for Finches) Regulations, 2016 (Legal Notice 322 of 2016[26]) declared the opening of the 2016 live-capturing season for finches from 20 October to 31 December 2016, inclusive of both days.

[26] LN 322 of 2016 is available at http://justiceservices.gov.mt/DownloadDocument.aspx?app=lp&itemid=28085&l=1

3. Discussion within Malta Ornis Committee leading up to application of derogation in 2016

3.1 Deliberations of the Malta Ornis Committee in relation to finch live-capturing derogation in 2014 and 2015 were summarised in Malta's reports on the application of these derogations[27] and will not be re-stated here.

3.2 In 2016, the Malta Ornis Committee discussed the proposed derogation during two sessions on 18 May 2016 and 9 June 2016 respectively. During these sessions, the Committee discussed the outcome of the 2015 season, considered an updated assessment of the population status of the seven finch species, enforcement arrangements and other scientific and technical parameters of relevance. Following its deliberations, the Committee recommended the application of a derogation in 2016, subject to the same parameters as in 2015. The recommendation was adopted following six votes in favour and one against.

4. Consideration of the conservation status of the seven finch species

4.1 Taking into consideration the provisions of Article 9(1) (c) of the Birds Directive, the Government assessed available scientific data regarding the conservation status of the seven finch species in question. In line with the "judicious use" requirement, this review of scientific data was undertaken in May 2016 in order to ascertain that the conservation status of finch species would not be threatened by the application of a limited Autumn 2016 live-capturing season. This assessment was presented to the Malta Ornis Committee in June 2016[28].

4.2 The assessment was based on the previous review of the conservation status of seven finch species undertaken in May 2015, which was further updated with the latest available scientific data. The 2016 update focused on the changes in the short-term and long-term trends of the seven finch species on the basis of Article 12 reports (EEA, 2014) for the period 2008–2012 and the latest European Bird Census Council (EBCC) update of 2015. The assessment furthermore reviewed data presented as part of EU Member States' Article 12 reports, wherein it was noted that although a number of Member States have reported a decrease in some of the finch populations,

[27] Derogation reports can be downloaded from http://msdec.gov.mt/en/Pages/WBRU/livecapturingder.aspx
[28] The assessment is enclosed as Annex I to this report.

such magnitude change is not actually reflected in the number of breeding pairs that was reported ten years earlier in Birds in Europe II (BirdLife International, 2004). In particular, it was noted that despite a reported decline, the number of breeding pairs as reported in Article 12 reports is actually higher than those reported ten years earlier. This was also the case in terms of reported increases, since the corresponding number of pairs in Birds in Europe II was either exactly the same or indeed higher than those in Article 12 reports. The values for the number of breeding pairs in 2004 was thus revised using an online percentages calculator to provide a more realistic number of breeding pairs based on the percentage changes as reported by each Member State in the current Article 12 reports.

4.3 The final analysis showed that in the short-term trend, the EU population of Chaffinch, Linnet, Goldfinch, Hawfinch, Serin and Siskin is stable at all levels of the population (minimum and maximum pairs and their geomean), whereas the Greenfinch population is increasing at all levels of the population (minimum and maximum pairs and their geomean). In terms of long-term trend, all seven finch species have been shown to be Stable at all three levels of their population (min/max/geomean), the Siskin being the only exception since it increased in the number of minimum pairs.

4.4 The same methodology as that used to assess trends at EU level (review of the 2004 baseline population) was also used to determine the short-term trends at ring recoveries level. It was shown that whilst the Goldfinch and Siskin increased, the Linnet, Hawfinch, Serin, Chaffinch, and Greenfinch were stable. In terms of long-term trends at ring recovery level, it was shown that the Chaffinch, Linnet, Greenfinch, Hawfinch and Serin were stable at all three levels of the population (min/max/geomean) whereas the Goldfinch and Siskin increased.

4.5 Table 1 below illustrates an overall update on the conservation status using a three-arrow set to differentiate between decreasing, stable and increasing trends. The upper table compares the trends at EU level with those at ring recoveries level whereas the lower part of the table compares the trends reported by EBCC (2015) at pan-European as well as at EU level with those reported by Member States in their Article 12 reports.

Table 1 – Population trends of the seven finch species

Species	EU Population						Ring Recoveries					
	Short-term Trend			Long-term Trend			Short-term Trend			Long-term Trend		
	Min Pairs	Max Pairs	Geomean	Min Pairs	Max Pairs	Geomean	Min Pairs	Max Pairs	Geomean	Min Pairs	Max Pairs	Geomean
Chaffinch	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨
Linnet	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨
Goldfinch	⇨	⇨	⇨	⇨	⇨	⇨	⇧	⇧	⇧	⇧	⇧	⇧
Greenfinch	⇧	⇧	⇧	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨
Hawfinch	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨
Serin	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨	⇨
Siskin	⇨	⇨	⇨	⇧	⇨	⇨	⇧	⇨	⇨	⇧	⇧	⇧

Data Sources: EBCC (2015); European Environment Agency (2014)

Species	Short-term Trend			Long-term Trend			
	EBCC 2015 (pan-European)	Article 12 (2008–2012) [EU Geomean]	Article 12 (2008–2012) [Ring Recoveries Geomean]	EBCC 2015 (pan-European)	EBCC 2015 (EU)	Article 12 (2008–2012) [EU Geomean]	Article 12 (2008–2012) [Ring Recoveries Geomean]
Chaffinch	⇨	⇨	⇨	⇧	⇧	⇨	⇨
Linnet	⇩	⇨	⇨	⇩	⇩	⇨	⇨
Goldfinch	⇩	⇨	⇧	⇧	⇧	⇨	⇧
Greenfinch	⇨	⇧	⇨	⇨	⇨	⇨	⇨
Hawfinch	⇧	⇨	⇨	⇧	⇧	⇨	⇨
Serin	⇩	⇨	⇨	⇩	⇩	⇨	⇨
Siskin	⇩	⇨	⇨	⇩	⇨	⇧	⇧

Data Sources: EBCC (2015); European Environment Agency (2014)

4.6 For each of the seven finch species considered in this analysis, the "small numbers" calculation was performed and the resulting number was reduced further to fall considerably below the 1% threshold for non-huntable species as specified in paragraph 3.5.34 of the Guidance Document on Sustainable Hunting. The <1% figure is based on a much smaller subset of the total breeding population of the respective species within the territory of the European Union, since only those European countries (Member States) from which there are ring recoveries in Malta form part of the reference population, with the exception of the Hawfinch. In the absence of ring recoveries pertaining to the latter species, the reference population of the Hawfinch is based on ring recoveries in Italy from other Member States.

4.7 The national bag limits as established are therefore much lower than <1% of the total annual mortality of the EU reference population of each finch species as they also take into account the average bag limits over a seven-year period (2002–2008), which in turn are all considerably below the <1% threshold (see Table 2 below).

4.8 Accordingly, the bag limits have been partitioned restrictively with those Member States that in 2008 had applied derogations for live-finch capturing or hunting of these finch species (EC, 2011), namely Austria (Linnet, Goldfinch, Siskin, Chaffinch and Hawfinch), Spain (Linnet, Goldfinch, Siskin, Chaffinch, Serin and Greenfinch) and Italy (Chaffinch). Table 2 also provides a direct comparison between the <1% mortality (calculated on the basis of the minimum EU breeding population size and lowest recruitment rate), the harvest record (average of *Carnet de Chasse* data over a seven-year period: 2002–2008) and the national bag limit for each of the seven species, which were retained as established in the Framework Regulations (S.L. 549.93)[29]. The national bag limit as a percentage of the bag limit partitioned with other EU Member States is also provided in the table.

Table 2 Consideration of the <1% mortality of the reference population and harvest records

Species	*Total Annual Mortality of Reference Population (Ring Recoveries)	Maximum Bag Limit from Reference Population (<1%)	Partitioned Maximum Bag Limit (<1%)	Average Annual Harvest (2002–2008)	National Bag Limit (SL 504.124)	National Bag Limit as a percentage of the Partitioned Bag Limit (<1%)
Chaffinch	20,257,860	202,579	50,645	6,075	5,000	9.87%
Linnet	5,868,018	58,680	19,364	17,950	12,000	61.97%
Goldfinch	4,663,440	46,634	15,389	1,025	800	5.20%
Greenfinch	9,303,840	93,038	46,519	5,598	4,500	9.67%
Hawfinch	3,832,753	38,328	6,388	604	500	7.83%
Serin	932,800	9,328	4,664	3,186	2,350	50.39%
Siskin	2,652,936	26,529	8,843	3,185	2,350	26.57%
Total			151,812		27,500	18.11%

* Data sources: Cramp and Perrins (1994); Bauer (2005); Robinson (2005), based on the minimum EU population (breeding pairs) as reported in Article 12 reports for the period 2008–2012 (EEA, 2014).

[29] http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12211&l=1

4.9 The detailed information on the assessment of conservation status for each of the species concerned, as well as determination of "small numbers" is contained in Part B of Annex I to this report.

5. ISSUANCE OF AUTUMN 2016 FINCH LIVE-CAPTURING LICENCES

5.1 Applications for a special finch live-capturing licence were received during a 19-day period between 11 July and 30 July 2016. Only those applicants who were at the time of application already in possession of a valid general live-capturing licence for 2016 (5-year General Licence card) were eligible to apply.

5.2 Applicants were informed that their applications are provisional, and that the issuance of a special licence would be subject to the actual decision to apply the derogation.

5.3 In order to apply, eligible persons were requested to submit a completed and signed application form, produce a valid General Licence card for 2016 (which was to include a general live-capturing licence), provide an ID card and a copy of up to two site plans registered with the Wild Birds Regulation Unit indicating the precise location and configuration of the site/s where the activity was intended to be practiced during the season. Each application was accepted against a licence fee of €55 as well as a charge of €0.50 per each special single use ring ordered by the applicant (a maximum of 10 rings could be ordered by each applicant). Applicants were informed that these fees were refundable only if no derogation is applied.

5.4 Applications for new general live-capturing licences were not accepted after 2014 and therefore no further examinations for this category of licence were conducted during 2016.

5.5 A total of 3,851 individuals submitted applications for special finch live-capturing licence (2,832 in Malta and 1,019 in Gozo). Of these, 719 persons (601 in Malta and 118 in Gozo) also applied to obtain special licence to capture Golden Plover and Song Thrush under the terms of a separate derogation.

5.6 Applications were screened against database of criminal records and seven applicants were found to be ineligible as they submitted their application

during the period of effective general licence suspension. Therefore the final number of special licences issued on 19 September 2016 was 3,844, of which 2,826 licences were issued to applicants resident in Malta and 1,018 to applicants resident in Gozo.

5.7 The total number of special finch live-capturing licences in 2016 was 1% less than the number of special licences issued in 2015 (3,877).

5.8 The Autumn 2016 live-capturing licence (vide Annex II) set a number of conditions for the 2016 live-capturing season, as provided in the Framework Regulations (S.L. 549.108 and the Notice of Derogation (Legal Notice 322 of 2016). The Regulations also included *inter alia*, restrictions on the mesh size to be used (not less than 18mm × 18mm), and the requirement for the licensee to immediately place the species-specific single-use ring (white, green or metal depending on the species) on the tarsus of the finch, followed by reporting the catch by dialling the number indicated on the 2016 special licence.

5.9 At any one time a licensed person could only make use of a maximum of twenty-one (21) specimens from the relevant species, including their hybrids, as live-decoys, with a ceiling of not more than seven live-decoys for any one species. All live-decoys, including hybrids, had to be fitted with a seamless closed ring, signifying that the bird is captive-bred. In addition to these conditions, licensed live-capturers were also required to abide with the provisions laid down in the Conservation of Wild Birds Regulations (S.L. 549.42).

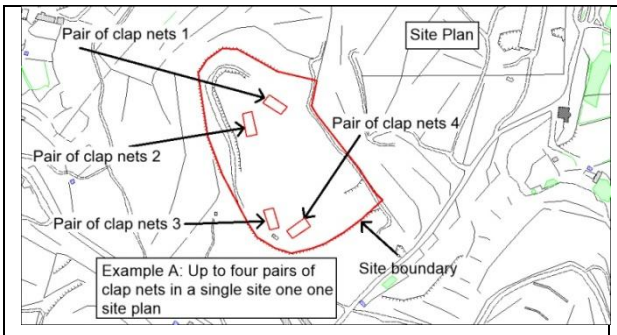
5.10 Licensees were legally required to immediately report their catches in real time by calling the number specified in their Special Licence as soon as the bird is captured and fitted with the single-use ring. They were also required to abide by the time restrictions and respect the seasonal bag limit per licence of 10 birds. Licensed finch live-capturers were required to carry their 2016 special licence for live-capturing and the General Licence card (with valid 2016 general live-capturing licence) at all times, together with the relevant registered site plans as approved by the Wild Birds Regulation Unit.

5.11 The registration and screening procedure for site plans, which ensured compliance with the rigorous criteria established in legislation, was

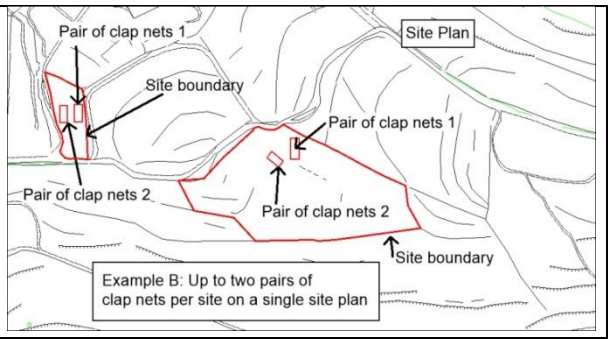
described in detail in Malta's report on the outcome of the 2014 finch live-capturing derogation and will not be re-stated in this report.

5.12 Licensees were only eligible to practice live-capturing on a maximum of two live-capturing stations per person, which could be configured either as two live-capturing stations within the same site, with each live-capturing station having not more than two pairs of clap-nets from one hide (see Figure 1, Example A); or as two separate live-capturing stations on one site plan with each live-capturing station having not more than two pairs of clap-nets from one hide (see Figure 1, Example B); or as two different site plans, with each site plan showing a single live-capturing station containing not more than two pairs of clap-nets from one hide (see Figure 1, Example C).

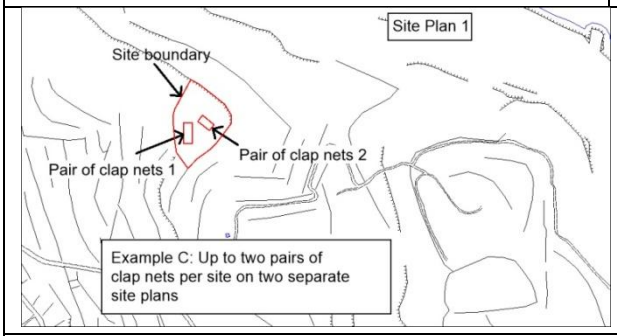
Figure 1: Live-capturing stations

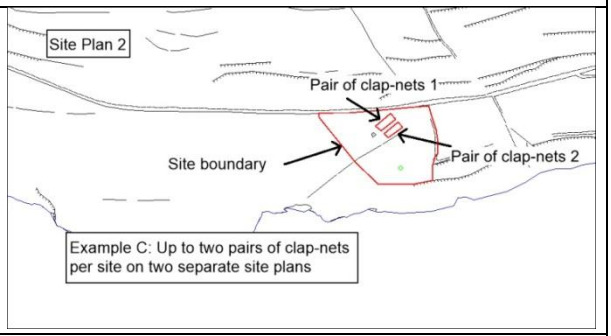


Example 'A': Two live-capturing stations within same site (and site plan)



Example 'B': Two live-capturing stations in separate sites on same site plan





Example 'C': Two separate live-capturing stations on two separate site plans

5.13 A total of 6,014 registered live-capturing stations (10,310 clap-net pairs)[30] pertaining to 3,844 finches special–licence holders were authorized to be active during the 2016 derogation (Table 3), an overall decrease when compared with the 2014 and 2015 finches live-capturing seasons (n_{2014}=6,438 registered live-capturing stations [11,370 clap-net pairs], submitted by 4,171 licensees; n_{2015}=6,246 registered live-capturing stations [10,710 clap-net pairs], submitted by 3,877 licensees). In 2016, a total of 4,283

[30] These two totals include stations and clap-net pairs registered on multiple special licence holders (e.g. one station registered on five licence holders).

registered live-capturing stations were located in Malta and 1,731 stations were located in Gozo. Each clap-net pair was subsequently digitalised and plotted on GIS together with the corresponding licensee's personal details, for field enforcement purposes. 74% (n=7,629) of the total clap-net pairs were intended exclusively for finch live-capturing whereas 26% (n=2,681) were intended to be used for finches as well as Golden Plover/Song-Thrush.

Table 3 – Live-capturing stations

Registered finch live-capturing stations in 2016			
	Stations*	Clap-net pairs*	Licensees*
Malta	4,283	7,476	2,826
Gozo	1,731	2,834	1,018
Total	6,014	10,310	3,844
* Data refers to licensees in possession of the finches special licence and licensees in possession of both the finches and Golden Plover/Song-Thrush special licences.			

Source: Wild Birds Regulation Unit, 2016

5.14 Following digitisation of all site plans submitted by the applicants for special live-capturing licence, a post-vetting verification exercise was carried out. A total of 58 clap-net pairs were revoked either because upon further examination the location did not meet the protected area criteria specified in the Framework Regulations (S.L. 549.93) or because the licensee had exceeded the permitted limit of two stations and/or more than four clap-net pairs.

6. SINGLE-USE RINGS

6.1 The applicants were required to declare the quantity of single-use rings up to a maximum of ten (any combination of colours up to ten in total). For the finches special licence, the single-use rings (finch rings) were issued in three different sizes bearing the official code R16U on each ring. The finch rings were colour-coded according to the species (and size), as shown in Table 4 and Figure 2.

Table 4 – Special single use rings

Ring colour	Species	Quantities supplied to licensees
White	Linnet, Chaffinch, Serin, Siskin and Goldfinch	28,022
Green	Greenfinch	5,671
Metal	Hawfinch	4,617
	Total	38,310

Source: Wild Birds Regulation Unit, 2016

Figure 2: 2016 finches single-use rings

Source: Wild Birds Regulation Unit, 2016

6.2 The limit imposed on single-use rings corresponded with the maximum individual seasonal bag limit of ten finches. Finch live-capturers applied for a total of 38,310 rings. White rings comprised 73.15% of this total, followed by green rings (14.8%) and metal (12.1%).

6.3 Following closure of the 2016 finch live-capturing season, licensed live-capturers were legally required to return all unused finch rings between the 16 January and 3 March 2017. The rings were only accepted on presentation of the identifying general licence card. By this deadline, 3,815 finch live-capturers returned a total of 30,901 finch rings. The remaining balance of 296 unreturned rings, as shown in Table 5 below, was subject to a €5 fine per ring. A total of 138 rings were not returned by the statutory deadline and therefore the individuals concerned were referred for necessary legal action. A further 133 rings were confiscated by enforcement officers during field enforcement operations.

Table 5 – returns of unused single use rings

Number of finch rings distributed	38,310
Number of finches caught	6,842
Number of finch rings returned	30,901
Number of rings not returned and subject to €5 fine per ring	296
Number of rings confiscated during enforcement operations	133
Rings not returned by deadline	138

Source: Wild Birds Regulation Unit, 2017

7. REAL-TIME GAME REPORTING SYSTEM

7.1 According to the Conservation of Wild Birds (Framework for Allowing a Derogation Opening an Autumn Live-capturing Season for Finches)

Regulations [S.L.549.93], licensed live-capturers were obliged to immediately report their catch by calling on number 77070006, as specified in the special licence.

7.2 The reporting system deployed a filtering / verification system which ensured that only registered mobile numbers pertaining to licensed individuals (as specified in their application form) were able to use the reporting system. A voice-over guided the caller to select the species, followed by the quantity caught. As soon as the call was registered the system would send an automated text message to the caller as an acknowledgement of the species and quantity caught. This SMS was to be retained throughout the season for potential inspection by enforcement officers. The telephonic system also contained a number of messages that reminded callers of their legal obligations, including bag limits, permitted hours and so on. Should a live-capturer attempt to report birds caught over his allowed quota, he would be immediately prompted to release the birds caught, and the report would be lodged for enforcement purposes.

7.3 Throughout the duration of the derogation, the Wild Birds Regulation Unit had access to monitor individual and national quota uptake for both species in real time. The system also allowed the generation of various statistical reports as well as reports on any individual live-capturer's data at any point in time. These reports, amongst other, stipulated the total number of birds reported caught per species during each day, cumulative totals, as well as the detailed information pertaining to precise time of each report, the registered mobile phone number pertaining to licensee making such a report, uptake of any individual licensee's personal quotas, personal data of any licensee and other information. Enforcement officers conducting patrols in the field were given access to this information.

7.4 All data was simultaneously and securely captured on two servers, with automatic back up every five minutes. A total of 12 telephone lines were available at any one time in case of simultaneous reports.

7.5 The system was programmed to automatically inform the callers that their individual seasonal bag limit of ten specimens was reached, at which point no further calls would be accepted from such numbers. These reports were closely monitored throughout the season, with a view to keeping track of various variables, including (i) the total number of birds per species caught

per day, (ii) cumulative totals (seasonal bag limits), and (iii) individual seasonal bag limits per licence. The game reporting data is presented in Table 6 and Figure 3 below.

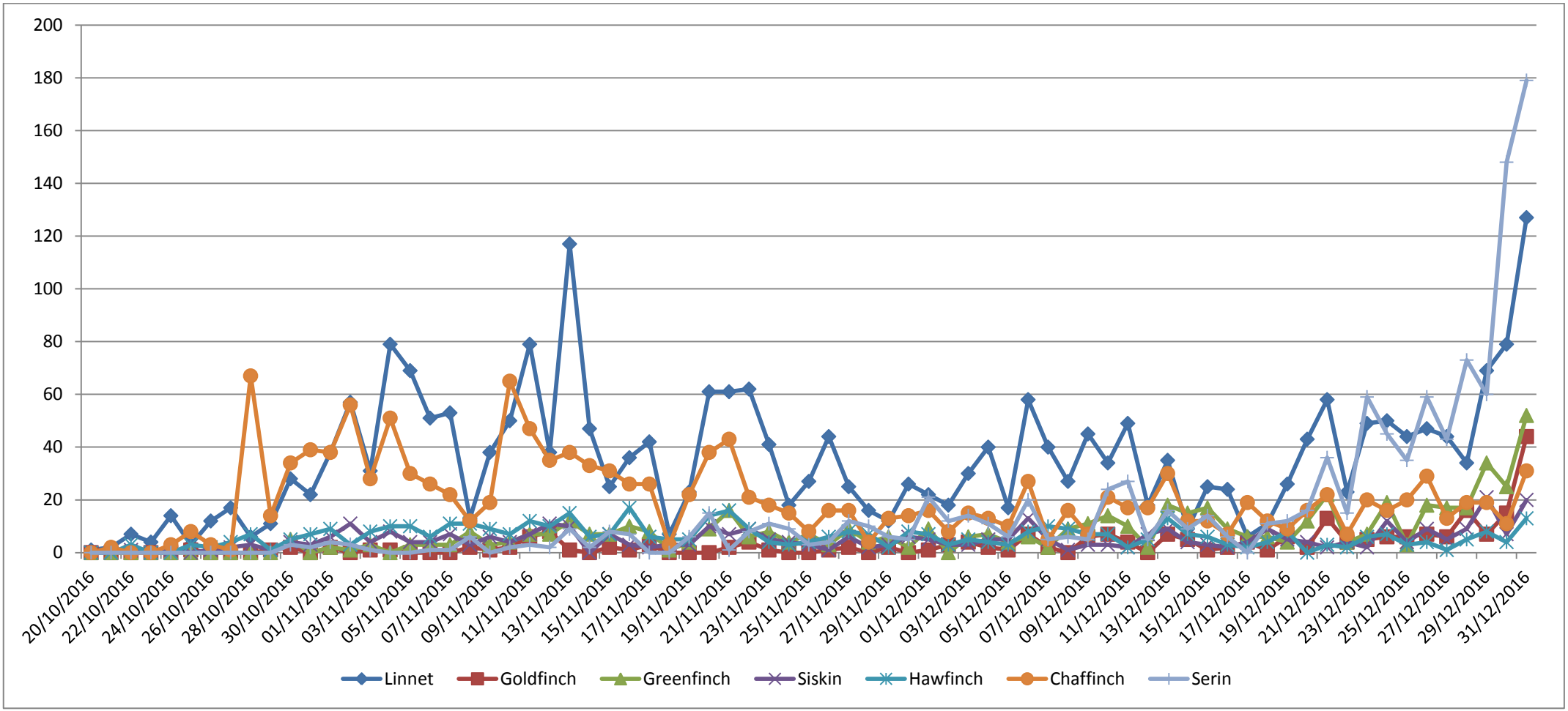
Table 6 – Finches caught as reported through the telephone system

Date	Linnet	Goldfinch	Greenfinch	Siskin	Hawfinch	Chaffinch	Serin
20/10/2016	1	0	0	0	0	0	0
21/10/2016	2	0	0	0	0	2	0
22/10/2016	7	0	0	1	3	0	0
23/10/2016	4	0	0	0	0	0	0
24/10/2016	14	0	0	1	0	3	0
25/10/2016	3	1	0	0	3	8	0
26/10/2016	12	0	0	1	2	3	0
27/10/2016	17	0	0	2	4	1	0
28/10/2016	6	0	0	3	7	67	0
29/10/2016	11	1	0	1	1	14	0
30/10/2016	28	2	5	4	5	34	3
31/10/2016	22	0	0	3	7	39	2
01/11/2016	38	2	2	6	9	38	4
02/11/2016	57	0	1	11	3	56	3
03/11/2016	31	1	3	4	8	28	1
04/11/2016	79	1	0	8	10	51	0
05/11/2016	69	0	3	4	10	30	0
06/11/2016	51	0	3	4	6	26	1
07/11/2016	53	0	3	7	11	22	1
08/11/2016	13	2	8	3	11	12	6
09/11/2016	38	1	3	6	9	19	0
10/11/2016	50	2	4	4	7	65	2
11/11/2016	79	6	7	7	12	47	3
12/11/2016	38	8	7	11	10	35	2
13/11/2016	117	1	12	10	15	38	9
14/11/2016	47	0	7	0	6	33	2
15/11/2016	25	2	7	7	7	31	8
16/11/2016	36	1	10	3	17	26	7
17/11/2016	42	3	8	2	6	26	0
18/11/2016	7	0	1	3	5	3	0
19/11/2016	23	0	4	3	5	22	6
20/11/2016	61	0	9	10	14	38	15
21/11/2016	61	2	16	7	16	43	1
22/11/2016	62	4	6	9	9	21	8
23/11/2016	41	1	8	5	4	18	11
24/11/2016	18	0	4	4	3	15	9
25/11/2016	27	0	7	3	4	8	3
26/11/2016	44	1	3	1	6	16	4
27/11/2016	25	2	9	6	8	16	12

Date	Linnet	Goldfinch	Greenfinch	Siskin	Hawfinch	Chaffinch	Serin
28/11/2016	16	0	4	2	7	4	10
29/11/2016	12	2	6	3	2	13	6
30/11/2016	26	0	2	6	8	14	5
01/12/2016	22	1	9	5	7	16	21
02/12/2016	18	3	0	3	3	8	12
03/12/2016	30	4	6	3	5	15	14
04/12/2016	40	2	7	5	4	13	11
05/12/2016	17	1	4	5	3	10	6
06/12/2016	58	7	6	13	8	27	20
07/12/2016	40	2	2	5	10	5	5
08/12/2016	27	0	9	1	9	16	6
09/12/2016	45	6	11	3	7	7	5
10/12/2016	34	7	14	3	7	21	24
11/12/2016	49	4	10	2	2	17	27
12/12/2016	18	0	2	7	5	17	5
13/12/2016	35	7	18	9	13	30	16
14/12/2016	9	5	15	4	7	12	9
15/12/2016	25	1	17	3	6	12	14
16/12/2016	24	2	9	2	3	7	6
17/12/2016	6	4	6	4	2	19	0
18/12/2016	11	1	6	9	4	12	11
19/12/2016	26	6	4	5	8	9	12
20/12/2016	43	2	12	4	0	16	16
21/12/2016	58	13	22	2	3	22	36
22/12/2016	23	4	4	4	2	7	15
23/12/2016	49	5	7	2	6	20	59
24/12/2016	50	6	19	12	7	16	45
25/12/2016	44	6	3	4	3	20	35
26/12/2016	47	7	18	9	4	29	59
27/12/2016	44	6	17	5	1	13	43
28/12/2016	34	16	17	9	5	19	73
29/12/2016	69	7	34	21	8	19	60
30/12/2016	79	15	25	7	4	11	148
31/12/2016	127	44	52	20	13	31	179
Total	2,614	240	557	365	449	1,481	1,136

Source: Wild Birds Regulation Unit, 2017

Figure 3 – Distribution of catches during the season



Source: Wild Birds Regulation Unit, 2017

7.6 No overall seasonal bag limit was reached for any of the species during the 2016 live-capturing derogation.

7.7 Over the period of the derogation, an individual seasonal bag limit of ten birds was reached by 215 licensees, whilst 1,491 licensees (39% of all licensees) reported a catch ranging from one bird to the maximum bag limit of ten, as shown in Table 7.

Table 7 – Comparative analysis of reported catches

Finches caught	Number of live-capturers declaring catch	Total finches reported caught
0	2,353	0
1	306	306
2	255	510
3	168	504
4	119	476
5	113	565
6	105	630
7	60	420
8	69	552
9	81	729
10	215	2,150
	Total caught	6,842

Source: Wild Birds Regulation Unit, 2017

8. FINCH MIGRATION STUDY

8.1 An independent scientific study was carried out between 20 October and 31 December 2016, inclusive of both dates, in order to obtain an estimate of migratory influxes of the seven finch species during the derogation period. The study, carried out by Ecoserv, was commissioned by the Wild Birds Regulation Unit, with its overall objective being to assess the influx or passage of the seven finch species during the autumn/winter 2016 migration period.

8.2 The study was expected to result in the following deliverables:

- Daily datasheets with raw counts for each of the seven finch species; and
- A monitoring report for autumn/winter 2016 finch migration season which includes:

    - List of monitoring stations which recorded high/low counts;
    - Dates which showed high/low peaks in the migration of each of the seven finch species;
    - A daily estimate of the influx of each of the seven finch species for the whole of the Maltese Islands;
    - The estimated total influx for these species for the whole of the study period, subject to scientifically justified assumptions;
    - A comparison of the influxes recorded in 2016 with the influxes recorded as a result of 2014 and 2015 studies;
    - A comparative analysis of the results obtained with the bag data extracted from the 2016 telephonic game reporting system.

8.3 The geographical scope of the study extended across the three inhabited islands of the Maltese archipelago (Malta, Gozo and Comino), with data gathered during an 11-week period from 20 October until 31 December 2016. Given that the study was mainly intended to quantify the influx of migrating finches, the count stations were located at strategic locations along the coast. A full copy of the survey report is attached in Annex III, with key conclusions summarised below.

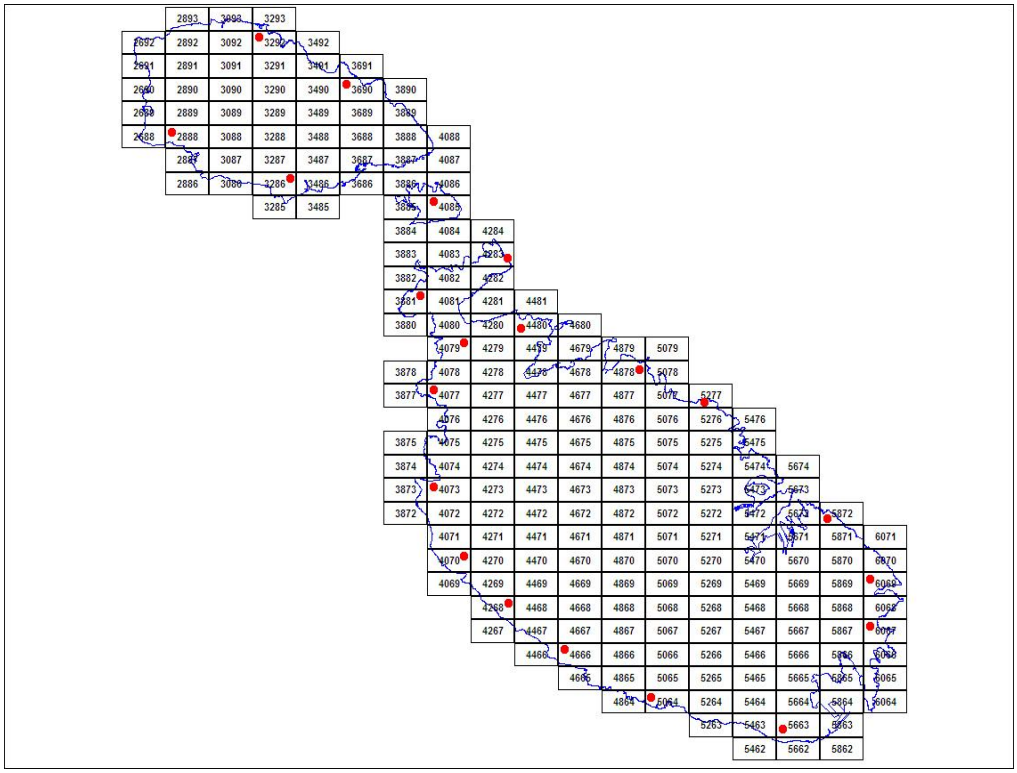
8.4 During the survey, two individuals - a specially trained field assistant capable of identifying finch species and an observer who was responsible for data recording in the field - were stationed at each of the total of 21 sites (count stations). During the survey, counts of individuals of the seven species were made at each of six different sites on each day during the monitoring period.

8.5 Each group of six sites was surveyed once every four days, such that a total of 21 sites were surveyed in total over each period of four days. The study site at Comino was included in the six sites surveyed on any one day, such that this site was surveyed on a daily basis; when weather conditions

precluded surveys at the Comino site due to unavailability of sea transport services, these were undertaken at alternative sites (in Ramla tal-Bir or Qala) instead. Counts obtained across this network of observation stations over the survey period are given in the following table.

8.6 Since the survey was mainly aimed at quantifying the influx of migrating individuals, field sites were sited at strategic locations behind the coast. The location of the sites is shown in Figure 4 below.

Figure 4 – Location of monitoring sites



Source: Ecoserv, 2017

8.7 For each species, the number of individuals observed flying within each study site was recorded, while the count area was estimated as the area within the observer's field of view when observing horizontally (c. 250m on each side of the observer) and vertically upwards (as far as the birds were detected by sight). To aid the observers detect the birds, field personnel used a pair of binoculars (magnification: 8 x 21). The different species were identified on the basis of their flight pattern and call. When the field personnel had doubt as to the specific identity of a species, a '?' was placed next to the record on the field data sheet to indicate the uncertainty. Afterwards, during data analysis (see below), comparison was made of records marked with a '?' from a particular site with records from other sites for the same day as corroboration procedure. Uncertain records were

allotted to the species which the field personnel determined as most probable with respect to species identity and which showed agreement with appreciable records from other sites on the same day for that species.

8.8 Monitoring for finches was carried out between 09:00 and 14:00 during the first eleven days of the study (i.e. up to the date when the daylight saving hour was removed) and between 08:00 and 13:00 during the rest of the study period. The count data collected for the pre-defined area and count period at each study site was used to establish the mean number of birds recorded for each day of the survey.

8.9 At each study site, the observers also recorded the prevalent weather conditions, namely wind direction and strength, and degree of cloud cover.

8.10 Using the recorded raw data for each of the seven bird species, estimates were made of the mean daily count and total count for the study period (20 October to 31 December 2016). Values of standard deviation for the respective mean daily counts were also estimated; standard deviation is a measure of variability among counts recorded from the different sites, that is, a low standard deviation implies that very similar counts were recorded at all six sites surveyed during a particular day, whereas dissimilar values would lead to a high standard deviation. Standard deviation is influenced by sample size (i.e. number of study sites); it tends to increase with a decreased sample size.

8.11 An estimate of total influx of the respective bird species was made using the daily counts. Extrapolations were then made to obtain the total number of individuals of each species that migrated over the Maltese Islands on a particular date. However, such an estimate must be treated with utmost caution, given that: (a) migration of finches is not necessarily restricted to that time of the year covered by the present study; (b) the relatively small number of sites used; (c) the counts were not made daily at each site; and (d) bird counts were made while the live-capturing season for finches was open, hence individuals may have been caught before the field personnel could record them. Being small birds, finches are easy to miss or present difficulty to identify if they pass beyond a certain distance from the observer, and especially if they do not call while in flight. Furthermore, passage of birds at different localities is extremely variable, with potential large

differences in birds passing at two different localities, even if these are separated only by a very small distance.

8.12 Another notable limiting factor was that the field survey was stopped in the early afternoon and did not start again before the following morning, hence potentially missing birds that arrive during that time of the day not covered by the present survey, as these would not have been recorded by the field observers. For example, most of the finch species are known to also migrate between dusk and dawn; hence individuals migrating during this time would not be detected during the survey. One should also note that finch migration starts before the period which was surveyed, given that migration starts from mid-September onwards whereas the autumn/winter migration of Golden Plover extends into January and hence such birds would not have been included in the present survey.

8.13 Since the coastal length surveyed at each site during the present survey is approximately 0.5 km, the mean daily count represents the mean influx of the respective species per 0.5 km coastline. The estimated daily influx was obtained by extrapolating the mean daily values obtained (per 0.5 km) to the total coastline length for the Maltese Islands, which have a perimeter of 271.22 km (Mallia et al, 2002)[31]; that is the estimated daily influx equals the mean daily count multiplied by an extrapolation factor of 271.22/0.5. The values of estimated daily influx were then summed to obtain an estimate of the total influx of the seven bird species.

8.14 Raw daily counts for Linnet recorded from the 21 sites during the present study varied between 0 and a maximum of 30, while the mean daily counts ranged between 0 and 7.5 (Table 8). During the present (2016) autumn migration, relatively high counts for this species were recorded on some days between 22nd October and 13th November 2016. The total counts, i.e. the total number of Linnet, recorded from a given grid location (= study site) during the whole study period (73 days), varied appreciably between the different sites: at the lower end, no individuals were recorded from the sites at grid locations 5064 and 5872, while at the higher end, 72 Linnet individuals were recorded from the site at grid location 4085, followed by 52 individuals recorded from the sites at grid location 4073. Counts of Linnet recorded from the present survey are lower than those recorded from autumn 2014 survey but higher than those recorded in the autumn 2015

[31] Note, however, that this estimate includes the perimeter of minor islets and rocks.

survey. Overall, a similar pattern of higher count values made during the period late October to mid-November is noted for the three years (Figure 5).

8.15 An estimate of total influx of Linnet over the Maltese Islands is given below. Based on the mean daily counts, extrapolation translates to an estimated daily influx ranging between 0 and 4,068 individuals, with a total influx over the survey period (20 October – 31 December; i.e. 73 days) of 33,901 individuals, i.e. some 464 birds per day.

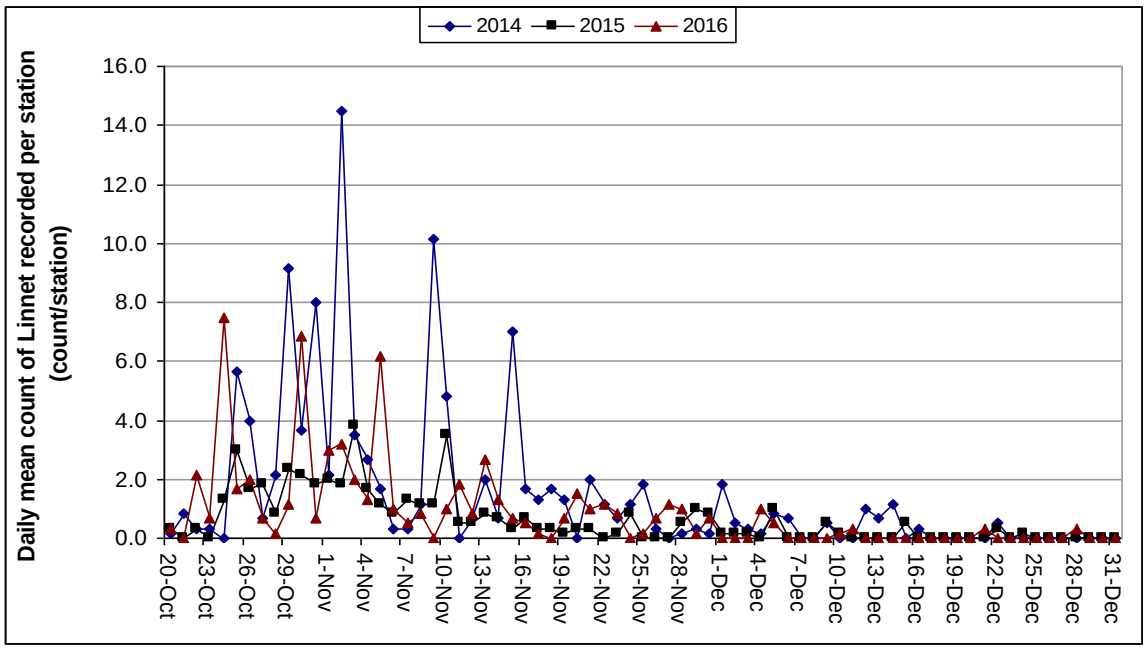
Table 8 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Linnet

Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-16	0.33	0.82	2	181
21-Oct-16	0.00	0.00	0	0
22-Oct-16	2.17	2.99	13	1175
23-Oct-16	0.67	1.03	4	362
24-Oct-16	7.50	7.64	45	4068
25-Oct-16	1.67	2.07	10	904
26-Oct-16	2.00	2.76	12	1085
27-Oct-16	0.67	1.63	4	362
28-Oct-16	0.17	0.41	1	90
29-Oct-16	1.17	1.83	7	633
30-Oct-16	6.83	11.70	41	3707
31-Oct-16	0.67	1.21	4	362
1-Nov-16	3.00	2.53	18	1627
2-Nov-16	3.17	5.08	19	1718
3-Nov-16	2.00	4.90	12	1085
4-Nov-16	1.33	1.97	8	723
5-Nov-16	6.17	5.08	37	3345
6-Nov-16	1.00	1.67	6	542
7-Nov-16	0.50	0.84	3	271
8-Nov-16	0.83	0.98	5	452
9-Nov-16	0.00	0.00	0	0
10-Nov-16	1.00	1.55	6	542
11-Nov-16	1.83	1.94	11	994
12-Nov-16	0.83	1.33	5	452
13-Nov-16	2.67	3.20	16	1447
14-Nov-16	1.33	2.16	8	723
15-Nov-16	0.67	1.63	4	362
16-Nov-16	0.50	1.22	3	271
17-Nov-16	0.17	0.41	1	90
18-Nov-16	0.00	0.00	0	0
19-Nov-16	0.67	1.63	4	362
20-Nov-16	1.50	1.87	9	814
21-Nov-16	1.00	1.10	6	542
22-Nov-16	1.17	1.83	7	633
23-Nov-16	0.83	2.04	5	452
24-Nov-16	0.00	0.00	0	0
25-Nov-16	0.17	0.41	1	90

Date	Mean Count ± SD		Total count	Estimated Daily Influx
26-Nov-16	0.67	1.03	4	362
27-Nov-16	1.17	2.04	7	633
28-Nov-16	1.00	2.00	6	542
29-Nov-16	0.17	0.41	1	90
30-Nov-16	0.67	1.21	4	362
1-Dec-16	0.00	0.00	0	0
2-Dec-16	0.00	0.00	0	0
3-Dec-16	0.00	0.00	0	0
4-Dec-16	1.00	1.26	6	542
5-Dec-16	0.50	1.22	3	271
6-Dec-16	0.00	0.00	0	0
7-Dec-16	0.00	0.00	0	0
8-Dec-16	0.00	0.00	0	0
9-Dec-16	0.00	0.00	0	0
10-Dec-16	0.17	0.41	1	90
11-Dec-16	0.33	0.82	2	181
12-Dec-16	0.00	0.00	0	0
13-Dec-16	0.00	0.00	0	0
14-Dec-16	0.00	0.00	0	0
15-Dec-16	0.00	0.00	0	0
16-Dec-16	0.00	0.00	0	0
17-Dec-16	0.00	0.00	0	0
18-Dec-16	0.00	0.00	0	0
19-Dec-16	0.00	0.00	0	0
20-Dec-16	0.00	0.00	0	0
21-Dec-16	0.33	0.82	2	181
22-Dec-16	0.00	0.00	0	0
23-Dec-16	0.00	0.00	0	0
24-Dec-16	0.00	0.00	0	0
25-Dec-16	0.00	0.00	0	0
26-Dec-16	0.00	0.00	0	0
27-Dec-16	0.00	0.00	0	0
28-Dec-16	0.33	0.82	2	181
29-Dec-16	0.00	0.00	0	0
30-Dec-16	0.00	0.00	0	0
31-Dec-16	0.00	0.00	0	0
			Estimated Total Influx	33,901

Source: Ecoserv, 2017

Figure 5 – Daily count of Linnet recorded in 2014, 2015 and 2016 monitoring studies



Source: Ecoserv, 2017

8.16 Raw daily counts for Chaffinch recorded from the 21 sites during the present study varied between 0 and a maximum of 26, while the mean daily counts ranged between 0 and 4.5 (Table 9). Relatively high counts for this species were recorded during the period 28th – 31st October 2016 and on 13th, 15th and 22nd November (Figure 6). The total counts, i.e. the total number of Chaffinch, recorded from a given grid location (= study site) during the whole study period (73 days), varied appreciably between the different sites: at the lower end, no individuals were recorded throughout the survey period from each of the sites at grid locations 5064 and 5872, while at the higher end, 50 Chaffinch individuals were recorded from the site at grid location 4085, followed by 31 individuals recorded from the site at grid location 4666.

8.17 An estimate of total influx of Chaffinch over the Maltese Islands is given in Table 9 below. Based on the mean daily counts, extrapolation translates to an estimated daily influx ranging between 0 and 2,441 individuals, with a total influx over the survey period (20 October – 31 December; i.e. 73 days) of 20,972 individuals, that is some 287 birds per day.

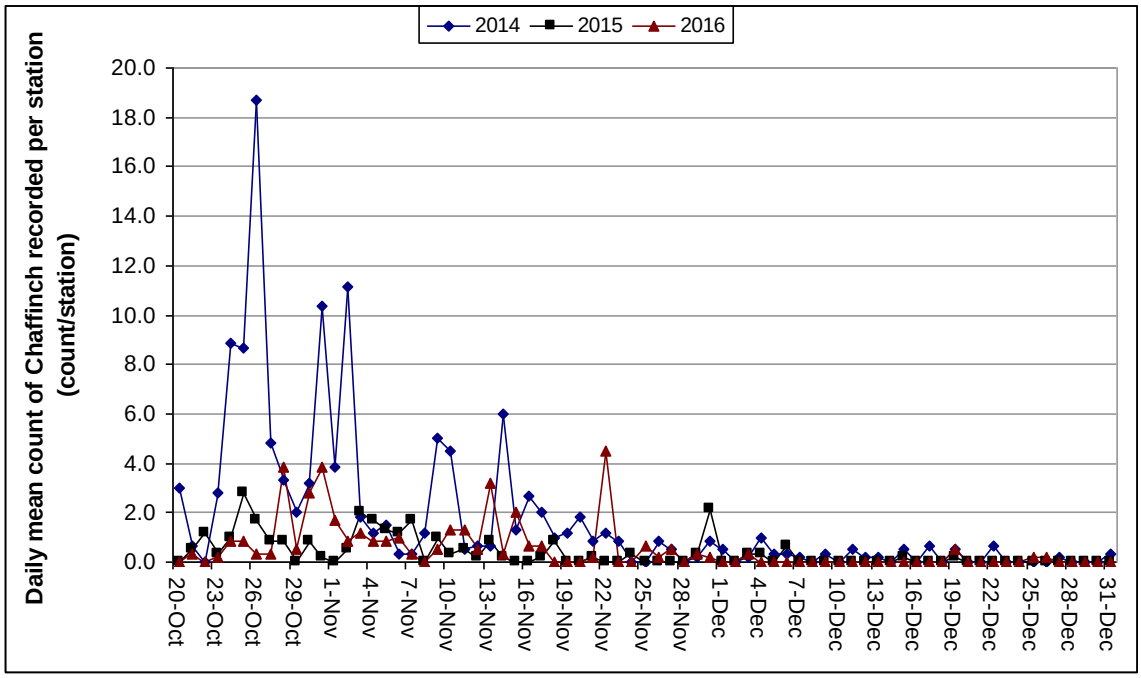
Table 9 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Chaffinch

Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-16	0.00	0.00	0	0
21-Oct-16	0.33	0.52	2	181
22-Oct-16	0.00	0.00	0	0
23-Oct-16	0.17	0.41	1	90
24-Oct-16	0.83	1.60	5	452
25-Oct-16	0.83	0.75	5	452
26-Oct-16	0.33	0.82	2	181
27-Oct-16	0.33	0.82	2	181
28-Oct-16	3.83	4.02	23	2079
29-Oct-16	0.50	1.22	3	271
30-Oct-16	2.83	3.71	17	1537
31-Oct-16	3.83	5.60	23	2079
1-Nov-16	1.67	2.34	10	904
2-Nov-16	0.83	1.60	5	452
3-Nov-16	1.17	1.33	7	633
4-Nov-16	0.83	1.60	5	452
5-Nov-16	0.83	0.98	5	452
6-Nov-16	1.00	1.67	6	542
7-Nov-16	0.33	0.82	2	181
8-Nov-16	0.00	0.00	0	0
9-Nov-16	0.50	1.22	3	271
10-Nov-16	1.33	1.63	8	723
11-Nov-16	1.33	2.16	8	723
12-Nov-16	0.50	0.84	3	271
13-Nov-16	3.17	3.06	19	1718
14-Nov-16	0.33	0.52	2	181
15-Nov-16	2.00	2.45	12	1085
16-Nov-16	0.67	1.21	4	362
17-Nov-16	0.67	1.63	4	362
18-Nov-16	0.00	0.00	0	0
19-Nov-16	0.00	0.00	0	0
20-Nov-16	0.00	0.00	0	0
21-Nov-16	0.17	0.41	1	90
22-Nov-16	4.50	10.54	27	2441
23-Nov-16	0.00	0.00	0	0
24-Nov-16	0.00	0.00	0	0
25-Nov-16	0.67	1.03	4	362
26-Nov-16	0.17	0.41	1	90
27-Nov-16	0.50	1.22	3	271
28-Nov-16	0.00	0.00	0	0
29-Nov-16	0.33	0.52	2	181
30-Nov-16	0.17	0.41	1	90
1-Dec-16	0.00	0.00	0	0
2-Dec-16	0.00	0.00	0	0
3-Dec-16	0.33	0.82	2	181
4-Dec-16	0.00	0.00	0	0
5-Dec-16	0.00	0.00	0	0
6-Dec-16	0.00	0.00	0	0
7-Dec-16	0.00	0.00	0	0
8-Dec-16	0.00	0.00	0	0

Date	Mean Count ± SD		Total count	Estimated Daily Influx
9-Dec-16	0.00	0.00	0	0
10-Dec-16	0.00	0.00	0	0
11-Dec-16	0.00	0.00	0	0
12-Dec-16	0.00	0.00	0	0
13-Dec-16	0.00	0.00	0	0
14-Dec-16	0.00	0.00	0	0
15-Dec-16	0.00	0.00	0	0
16-Dec-16	0.00	0.00	0	0
17-Dec-16	0.00	0.00	0	0
18-Dec-16	0.00	0.00	0	0
19-Dec-16	0.50	1.22	3	271
20-Dec-16	0.00	0.00	0	0
21-Dec-16	0.00	0.00	0	0
22-Dec-16	0.00	0.00	0	0
23-Dec-16	0.00	0.00	0	0
24-Dec-16	0.00	0.00	0	0
25-Dec-16	0.17	0.41	1	90
26-Dec-16	0.17	0.41	1	90
27-Dec-16	0.00	0.00	0	0
28-Dec-16	0.00	0.00	0	0
29-Dec-16	0.00	0.00	0	0
30-Dec-16	0.00	0.00	0	0
31-Dec-16	0.00	0.00	0	0
			Estimated Total Influx	20,972

Source: Ecoserv, 2017

Figure 6 – Daily count of Chaffinch recorded in 2014, 2015 and 2016 monitoring studies



Source: Ecoserv, 2017

8.18 Raw daily counts for Greenfinch recorded from the 21 sites during the present study varied between 0 and a maximum of 2, while the mean daily

counts ranged between 0 and 0.67. Counts for this species were therefore very low overall. Throughout the survey period, a total of 2 individuals were recorded from the site at grid locations4079 and 4878, while a single individual was recorded from each of the sites at grid locations 3292, 4268, 4077, 4073 and 3881; no individuals were recorded throughout the survey period from any of the other sites.

8.19 Values of mean daily counts and total counts of Greenfinch recorded during the period 20 October to 31 December 2016 from the present survey as well as values of standard deviation associated with the mean daily counts are provided in tables below. Counts of Greenfinch recorded from the present survey, along with ones made during the autumn 2014 and 2015 surveys, are shown graphically in Figure 7. Overall, count values for Greenfinch from the present (autumn 2016) survey are appreciably lower than those recorded from the previous autumn 2014 survey but similar to those recorded in the autumn 2015 survey.

8.20 The estimated total influx of Greenfinch over the Maltese Islands is given in Table 10. Based on the mean daily counts, extrapolation translates to an estimated daily influx ranging between 0 and 362 individuals, with a total influx over the survey period (20 October – 31 December; that is 73 days) of 812 individuals, that is, around 11 birds per day.

Table 10 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Greenfinch

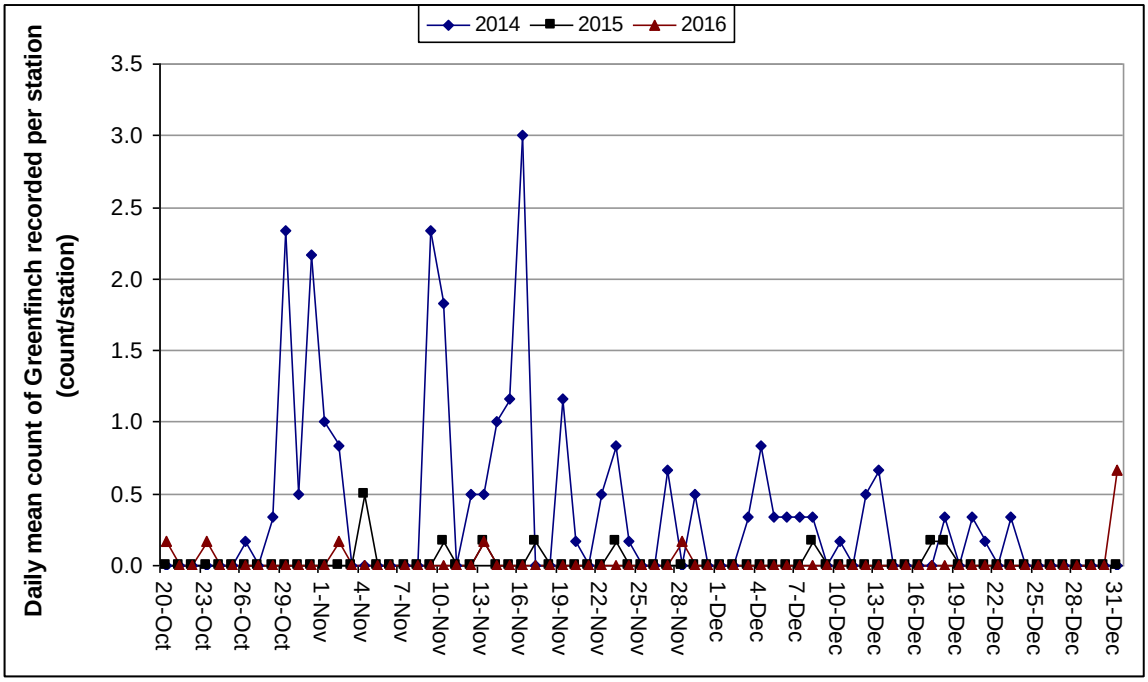
Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-16	0.17	0.41	1	90
21-Oct-16	0	0	0	0
22-Oct-16	0	0	0	0
23-Oct-16	0.17	0.41	1	90
24-Oct-16	0	0	0	0
25-Oct-16	0	0	0	0
26-Oct-16	0	0	0	0
27-Oct-16	0	0	0	0
28-Oct-16	0	0	0	0
29-Oct-16	0	0	0	0
30-Oct-16	0	0	0	0
31-Oct-16	0	0	0	0
1-Nov-16	0	0	0	0
2-Nov-16	0.17	0.41	1	90
3-Nov-16	0	0	0	0
4-Nov-16	0	0	0	0
5-Nov-16	0	0	0	0

Date	Mean Count ± SD		Total count	Estimated Daily Influx
6-Nov-16	0	0	0	0
7-Nov-16	0	0	0	0
8-Nov-16	0	0	0	0
9-Nov-16	0	0	0	0
10-Nov-16	0	0	0	0
11-Nov-16	0	0	0	0
12-Nov-16	0	0	0	0
13-Nov-16	0.17	0.41	1	90
14-Nov-16	0	0	0	0
15-Nov-16	0	0	0	0
16-Nov-16	0	0	0	0
17-Nov-16	0	0	0	0
18-Nov-16	0	0	0	0
19-Nov-16	0	0	0	0
20-Nov-16	0	0	0	0
21-Nov-16	0	0	0	0
22-Nov-16	0	0	0	0
23-Nov-16	0	0	0	0
24-Nov-16	0	0	0	0
25-Nov-16	0	0	0	0
26-Nov-16	0	0	0	0
27-Nov-16	0	0	0	0
28-Nov-16	0.17	0.41	1	90
29-Nov-16	0	0	0	0
30-Nov-16	0	0	0	0
1-Dec-16	0	0	0	0
2-Dec-16	0	0	0	0
3-Dec-16	0	0	0	0
4-Dec-16	0	0	0	0
5-Dec-16	0	0	0	0
6-Dec-16	0	0	0	0
7-Dec-16	0	0	0	0
8-Dec-16	0	0	0	0
9-Dec-16	0	0	0	0
10-Dec-16	0	0	0	0
11-Dec-16	0	0	0	0
12-Dec-16	0	0	0	0
13-Dec-16	0	0	0	0
14-Dec-16	0	0	0	0
15-Dec-16	0	0	0	0
16-Dec-16	0	0	0	0
17-Dec-16	0	0	0	0
18-Dec-16	0	0	0	0
19-Dec-16	0	0	0	0
20-Dec-16	0	0	0	0
21-Dec-16	0	0	0	0
22-Dec-16	0	0	0	0
23-Dec-16	0	0	0	0
24-Dec-16	0	0	0	0
25-Dec-16	0	0	0	0
26-Dec-16	0	0	0	0
27-Dec-16	0	0	0	0
28-Dec-16	0	0	0	0
29-Dec-16	0	0	0	0

Date	Mean Count ± SD		Total count	Estimated Daily Influx
30-Dec-16	0	0	0	0
31-Dec-16	0.67	1.03	4	362
			Estimated Total Influx	812

Source: Ecoserv, 2017

Figure 7 – Daily count of Greenfinch recorded in 2014, 2015 and 2016 monitoring studies



Source: Ecoserv, 2017

8.21 Raw daily counts for Siskin recorded from the 21 sites during the present study varied between 0 and a maximum of 5, while the mean daily counts ranged between 0 and 0.83 (Table 11). Counts for this species were therefore very low overall. Throughout the survey period, a total of 7 individuals were recorded from the site at grid location 4085, while no individuals were recorded throughout the survey period from thirteen of the sites.

8.22 The estimated total influx of Siskin over the Maltese Islands is given in Table 11. Based on the mean daily counts (Figure 8), extrapolation translates to an estimated daily influx ranging between 0 and 452 individuals, with a total influx over the survey period (20 October – 31 December; i.e. 73 days) of 1,536 individuals, that is some 21 birds per day.

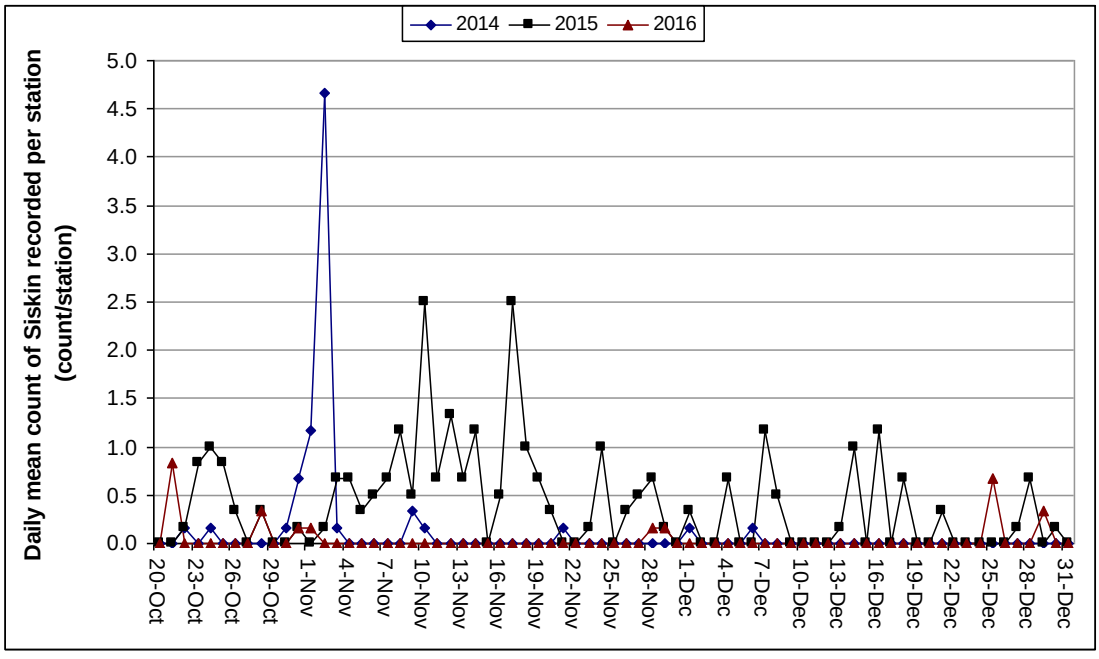
Table 11 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Siskin

Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-16	0.00	0.00	0	0
21-Oct-16	0.83	2.04	5	452
22-Oct-16	0.00	0.00	0	0
23-Oct-16	0.00	0.00	0	0
24-Oct-16	0.00	0.00	0	0
25-Oct-16	0.00	0.00	0	0
26-Oct-16	0.00	0.00	0	0
27-Oct-16	0.00	0.00	0	0
28-Oct-16	0.33	0.82	2	181
29-Oct-16	0.00	0.00	0	0
30-Oct-16	0.00	0.00	0	0
31-Oct-16	0.17	0.41	1	90
1-Nov-16	0.17	0.41	1	90
2-Nov-16	0.00	0.00	0	0
3-Nov-16	0.00	0.00	0	0
4-Nov-16	0.00	0.00	0	0
5-Nov-16	0.00	0.00	0	0
6-Nov-16	0.00	0.00	0	0
7-Nov-16	0.00	0.00	0	0
8-Nov-16	0.00	0.00	0	0
9-Nov-16	0.00	0.00	0	0
10-Nov-16	0.00	0.00	0	0
11-Nov-16	0.00	0.00	0	0
12-Nov-16	0.00	0.00	0	0
13-Nov-16	0.00	0.00	0	0
14-Nov-16	0.00	0.00	0	0
15-Nov-16	0.00	0.00	0	0
16-Nov-16	0.00	0.00	0	0
17-Nov-16	0.00	0.00	0	0
18-Nov-16	0.00	0.00	0	0
19-Nov-16	0.00	0.00	0	0
20-Nov-16	0.00	0.00	0	0
21-Nov-16	0.00	0.00	0	0
22-Nov-16	0.00	0.00	0	0
23-Nov-16	0.00	0.00	0	0
24-Nov-16	0.00	0.00	0	0
25-Nov-16	0.00	0.00	0	0
26-Nov-16	0.00	0.00	0	0
27-Nov-16	0.00	0.00	0	0
28-Nov-16	0.17	0.41	1	90
29-Nov-16	0.17	0.41	1	90
30-Nov-16	0.00	0.00	0	0
1-Dec-16	0.00	0.00	0	0
2-Dec-16	0.00	0.00	0	0
3-Dec-16	0.00	0.00	0	0
4-Dec-16	0.00	0.00	0	0
5-Dec-16	0.00	0.00	0	0
6-Dec-16	0.00	0.00	0	0
7-Dec-16	0.00	0.00	0	0
8-Dec-16	0.00	0.00	0	0

Date	Mean Count ± SD		Total count	Estimated Daily Influx
9-Dec-16	0.00	0.00	0	0
10-Dec-16	0.00	0.00	0	0
11-Dec-16	0.00	0.00	0	0
12-Dec-16	0.00	0.00	0	0
13-Dec-16	0.00	0.00	0	0
14-Dec-16	0.00	0.00	0	0
15-Dec-16	0.00	0.00	0	0
16-Dec-16	0.00	0.00	0	0
17-Dec-16	0.00	0.00	0	0
18-Dec-16	0.00	0.00	0	0
19-Dec-16	0.00	0.00	0	0
20-Dec-16	0.00	0.00	0	0
21-Dec-16	0.00	0.00	0	0
22-Dec-16	0.00	0.00	0	0
23-Dec-16	0.00	0.00	0	0
24-Dec-16	0.00	0.00	0	0
25-Dec-16	0.67	1.03	4	362
26-Dec-16	0.00	0.00	0	0
27-Dec-16	0.00	0.00	0	0
28-Dec-16	0.00	0.00	0	0
29-Dec-16	0.33	0.82	2	181
30-Dec-16	0.00	0.00	0	0
31-Dec-16	0.00	0.00	0	0
			Estimated Total Influx	1,536

Source: Ecoserv, 2017

Figure 8 – Daily count of Siskin recorded in 2014, 2015 and 2016 monitoring studies



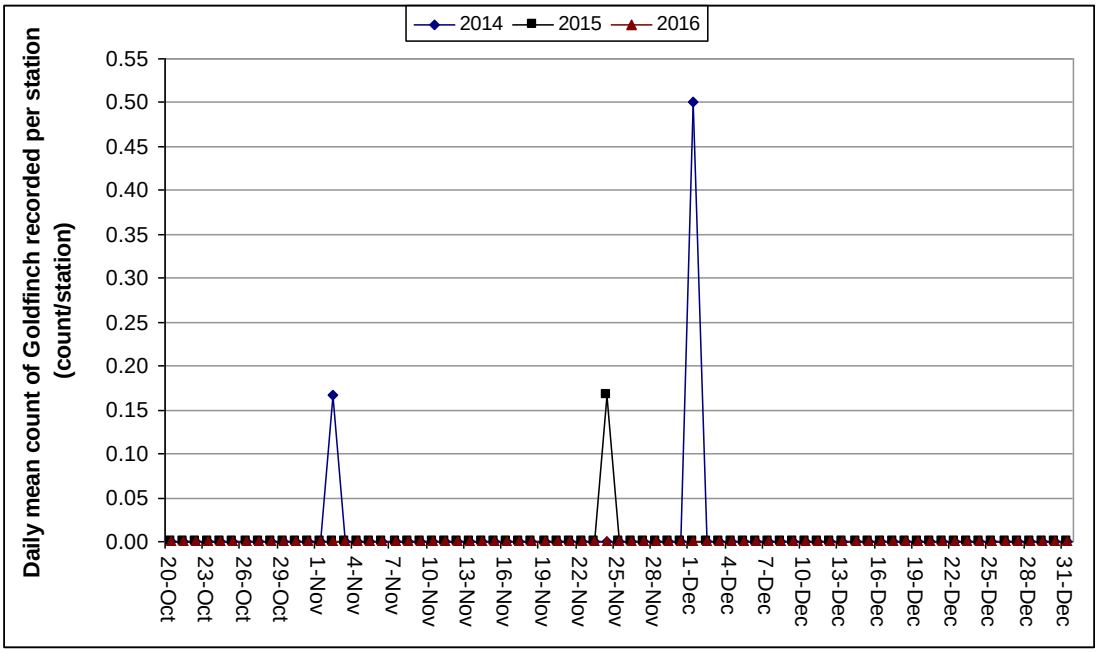
Source: Ecoserv, 2017

8.23 No Goldfinch individuals were recorded during the entire survey period from any of the study sites during the present survey; all raw daily counts and mean daily counts for Goldfinch recorded from the 21 sites during the

present study were therefore 0 (Figure 9). These results do not allow estimation of total influx of Goldfinch over the Maltese Islands.

8.24 Such a result must be interpreted with utmost caution, since a mean count value of '0' recorded for a bird species would also have been extrapolated to a total influx value for that specific data, is highly unlikely to correspond to actual total absence of migration of the particular species over the Maltese Islands, and should be attributed to an artefact of sampling, resulting from the small sample size.

Figure 9 – Daily count of Goldfinch recorded in 2014, 2015 and 2016 monitoring studies



Source: Ecoserv, 2017

8.25 Raw daily counts for Serin recorded from the 21 sites during the present study varied between 0 and a maximum of 17, while the mean daily counts ranged between 0 and 2.8 (Table 13). Relatively high counts for this species were recorded on 15 and 19 December 2016. The total counts, that is, the total number of Serin, recorded from a given grid location (= study site) during the whole study period (73 days), varied appreciably between the different sites: at the lower end, no individuals were recorded throughout the survey period from each of the sites at grid locations 6067, 4878, 4077, 6069, 4073, 5872, 4283, 3690 and 5277, while at the higher end, 35 and 16 Serin individuals were recorded from the sites at grid locations 4085 and 3292 respectively.

8.26 Values of mean daily counts and total counts of Serin recorded during the period 20 October to 31 December 2016 from the present survey are summarised in Table 12. Values of standard deviation associated with the mean daily counts are also provided in Table 12. Counts of Serin recorded from the present survey, along with ones made during the autumn 2014 and 2015 survey, are shown graphically in Figure 10. Overall, count values for Siskin from the present (autumn 2016) survey are lower than those recorded from the previous autumn 2014 survey but similar to those recorded from autumn 2015 survey. A similar pattern of highest count values made during the period early November to late December is noted for all three years. However, while counts for this species are noted during the period 30 October to 4 November 2014, no counts were recorded during the same period in 2015 or 2016 (Figure 9).

8.27 The estimated total influx of Serin over the Maltese Islands is given below. Based on the mean daily counts, extrapolation translates to an estimated daily influx ranging between 0 and 1,537 individuals, with a total influx over the survey period (20 October – 31 December; i.e. 73 days) of 8,316 individuals, i.e. some 114 birds per day.

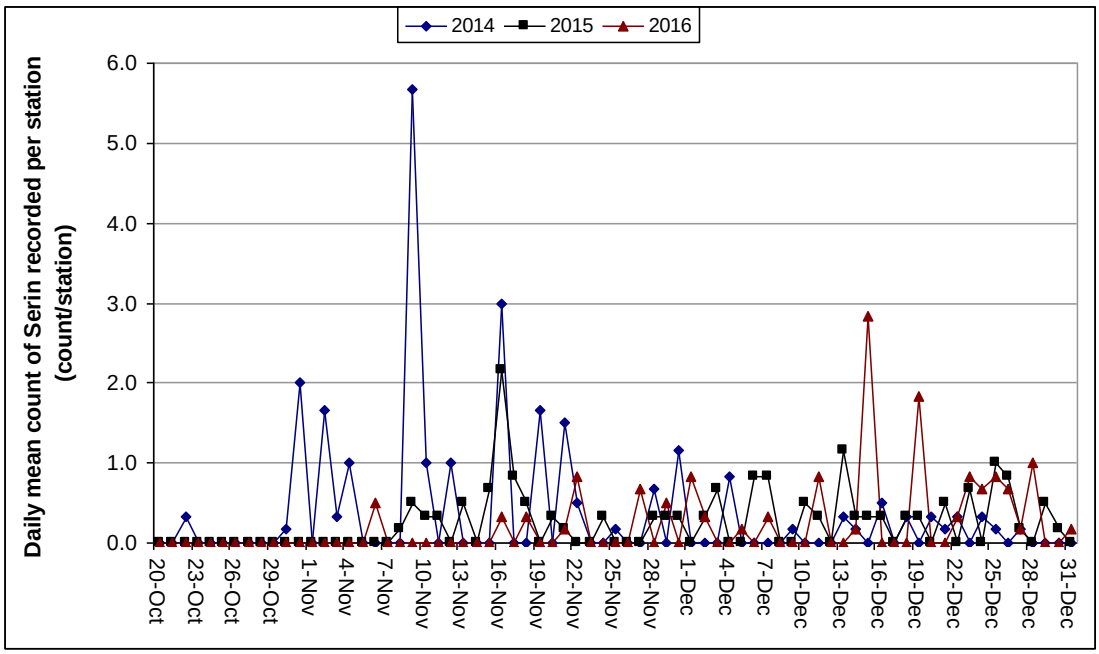
Table 12 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Serin

Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-16	0.00	0.00	0	0
21-Oct-16	0.00	0.00	0	0
22-Oct-16	0.00	0.00	0	0
23-Oct-16	0.00	0.00	0	0
24-Oct-16	0.00	0.00	0	0
25-Oct-16	0.00	0.00	0	0
26-Oct-16	0.00	0.00	0	0
27-Oct-16	0.00	0.00	0	0
28-Oct-16	0.00	0.00	0	0
29-Oct-16	0.00	0.00	0	0
30-Oct-16	0.00	0.00	0	0
31-Oct-16	0.00	0.00	0	0
1-Nov-16	0.00	0.00	0	0
2-Nov-16	0.00	0.00	0	0
3-Nov-16	0.00	0.00	0	0
4-Nov-16	0.00	0.00	0	0
5-Nov-16	0.00	0.00	0	0
6-Nov-16	0.50	1.22	3	271
7-Nov-16	0.00	0.00	0	0
8-Nov-16	0.00	0.00	0	0
9-Nov-16	0.00	0.00	0	0
10-Nov-16	0.00	0.00	0	0
11-Nov-16	0.00	0.00	0	0

Date	Mean Count ± SD		Total count	Estimated Daily Influx
12-Nov-16	0.00	0.00	0	0
13-Nov-16	0.00	0.00	0	0
14-Nov-16	0.00	0.00	0	0
15-Nov-16	0.00	0.00	0	0
16-Nov-16	0.33	0.82	2	181
17-Nov-16	0.00	0.00	0	0
18-Nov-16	0.33	0.82	2	181
19-Nov-16	0.00	0.00	0	0
20-Nov-16	0.00	0.00	0	0
21-Nov-16	0.17	0.41	1	90
22-Nov-16	0.83	1.33	5	452
23-Nov-16	0.00	0.00	0	0
24-Nov-16	0.00	0.00	0	0
25-Nov-16	0.00	0.00	0	0
26-Nov-16	0.00	0.00	0	0
27-Nov-16	0.67	1.21	4	362
28-Nov-16	0.00	0.00	0	0
29-Nov-16	0.50	0.84	3	271
30-Nov-16	0.00	0.00	0	0
1-Dec-16	0.83	2.04	5	452
2-Dec-16	0.33	0.52	2	181
3-Dec-16	0.00	0.00	0	0
4-Dec-16	0.00	0.00	0	0
5-Dec-16	0.17	0.41	1	90
6-Dec-16	0.00	0.00	0	0
7-Dec-16	0.33	0.82	2	181
8-Dec-16	0.00	0.00	0	0
9-Dec-16	0.00	0.00	0	0
10-Dec-16	0.00	0.00	0	0
11-Dec-16	0.83	1.60	5	452
12-Dec-16	0.00	0.00	0	0
13-Dec-16	0.00	0.00	0	0
14-Dec-16	0.17	0.41	1	90
15-Dec-16	2.83	6.94	17	1537
16-Dec-16	0.00	0.00	0	0
17-Dec-16	0.00	0.00	0	0
18-Dec-16	0.00	0.00	0	0
19-Dec-16	1.83	2.99	11	994
20-Dec-16	0.00	0.00	0	0
21-Dec-16	0.00	0.00	0	0
22-Dec-16	0.33	0.82	2	181
23-Dec-16	0.83	1.33	5	452
24-Dec-16	0.67	1.21	4	362
25-Dec-16	0.83	1.33	5	452
26-Dec-16	0.67	1.03	4	362
27-Dec-16	0.17	0.41	1	90
28-Dec-16	1.00	1.67	6	542
29-Dec-16	0.00	0.00	0	0
30-Dec-16	0.00	0.00	0	0
31-Dec-16	0.17	0.41	1	90
			Estimated Total Influx	8,316

Source: Ecoserv, 2017

Figure 10 – Daily count of Serin recorded in 2014, 2015 and 2016 monitoring studies



Source: Ecoserv, 2017

8.28 Raw daily counts for Hawfinch recorded from the 21 sites during the present study varied between 0 and a maximum of 1, while the mean daily counts ranged between 0 and 0.17 (Table 13). Counts for this species were therefore very low overall: a single Hawfinch individual was recorded from the site at grid location 4077, while no individuals were recorded throughout the survey period from any of the other sites. However, this result should be interpreted with caution, particularly in the light that 449 individuals were reported caught during autumn 2016. The Hawfinch is a shy, elusive bird that seeks the cover of vegetation, particularly thick shrubs and trees, and is particularly difficult to detect while in flight. The present record of a single individual of this species may therefore have resulted from under-sampling, and should not be taken as an indication of the actual migratory influx for this species.

8.29 The estimated total influx of Hawfinch over the Maltese Islands is given in Table 13. Based on the mean daily counts (Figure 11), extrapolation translates to an estimated daily influx ranging between 0 and 90 individuals, with a total influx over the survey period (20 October – 31 December; i.e. 73 days) of 90 individuals.

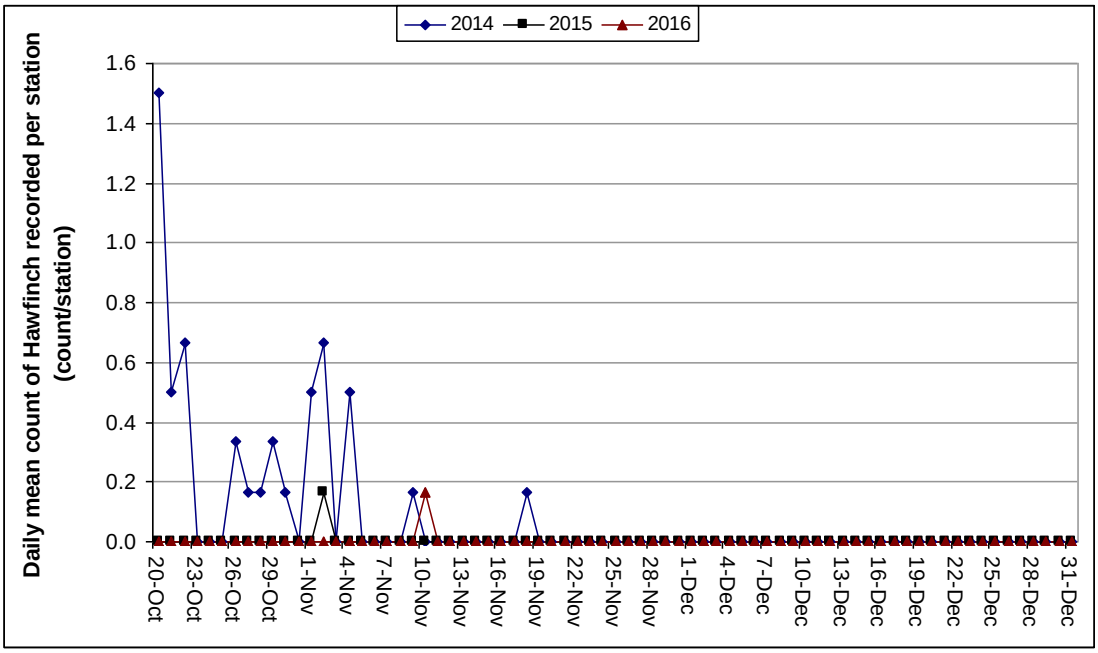
Table 13 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Hawfinch

Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-16	0.00	0.00	0	0
21-Oct-16	0.00	0.00	0	0
22-Oct-16	0.00	0.00	0	0
23-Oct-16	0.00	0.00	0	0
24-Oct-16	0.00	0.00	0	0
25-Oct-16	0.00	0.00	0	0
26-Oct-16	0.00	0.00	0	0
27-Oct-16	0.00	0.00	0	0
28-Oct-16	0.00	0.00	0	0
29-Oct-16	0.00	0.00	0	0
30-Oct-16	0.00	0.00	0	0
31-Oct-16	0.00	0.00	0	0
1-Nov-16	0.00	0.00	0	0
2-Nov-16	0.00	0.00	0	0
3-Nov-16	0.00	0.00	0	0
4-Nov-16	0.00	0.00	0	0
5-Nov-16	0.00	0.00	0	0
6-Nov-16	0.00	0.00	0	0
7-Nov-16	0.00	0.00	0	0
8-Nov-16	0.00	0.00	0	0
9-Nov-16	0.00	0.00	0	0
10-Nov-16	0.17	0.41	1	90
11-Nov-16	0.00	0.00	0	0
12-Nov-16	0.00	0.00	0	0
13-Nov-16	0.00	0.00	0	0
14-Nov-16	0.00	0.00	0	0
15-Nov-16	0.00	0.00	0	0
16-Nov-16	0.00	0.00	0	0
17-Nov-16	0.00	0.00	0	0
18-Nov-16	0.00	0.00	0	0
19-Nov-16	0.00	0.00	0	0
20-Nov-16	0.00	0.00	0	0
21-Nov-16	0.00	0.00	0	0
22-Nov-16	0.00	0.00	0	0
23-Nov-16	0.00	0.00	0	0
24-Nov-16	0.00	0.00	0	0
25-Nov-16	0.00	0.00	0	0
26-Nov-16	0.00	0.00	0	0
27-Nov-16	0.00	0.00	0	0
28-Nov-16	0.00	0.00	0	0
29-Nov-16	0.00	0.00	0	0
30-Nov-16	0.00	0.00	0	0
1-Dec-16	0.00	0.00	0	0
2-Dec-16	0.00	0.00	0	0
3-Dec-16	0.00	0.00	0	0
4-Dec-16	0.00	0.00	0	0
5-Dec-16	0.00	0.00	0	0
6-Dec-16	0.00	0.00	0	0
7-Dec-16	0.00	0.00	0	0
8-Dec-16	0.00	0.00	0	0
9-Dec-16	0.00	0.00	0	0

Date	Mean Count ± SD		Total count	Estimated Daily Influx
10-Dec-16	0.00	0.00	0	0
11-Dec-16	0.00	0.00	0	0
12-Dec-16	0.00	0.00	0	0
13-Dec-16	0.00	0.00	0	0
14-Dec-16	0.00	0.00	0	0
15-Dec-16	0.00	0.00	0	0
16-Dec-16	0.00	0.00	0	0
17-Dec-16	0.00	0.00	0	0
18-Dec-16	0.00	0.00	0	0
19-Dec-16	0.00	0.00	0	0
20-Dec-16	0.00	0.00	0	0
21-Dec-16	0.00	0.00	0	0
22-Dec-16	0.00	0.00	0	0
23-Dec-16	0.00	0.00	0	0
24-Dec-16	0.00	0.00	0	0
25-Dec-16	0.00	0.00	0	0
26-Dec-16	0.00	0.00	0	0
27-Dec-16	0.00	0.00	0	0
28-Dec-16	0.00	0.00	0	0
29-Dec-16	0.00	0.00	0	0
30-Dec-16	0.00	0.00	0	0
31-Dec-16	0.00	0.00	0	0
			Estimated Total Influx	90

Source: Ecoserv, 2017

Figure 11 – Daily count of Hawfinch recorded in 2014, 2015 and 2016 monitoring studies



Source: Ecoserv, 2017

9. COMPARISON OF ESTIMATED MIGRATION WITH REPORTED CATCHES

9.1 Following closure of the season, WBRU conducted an enquiry amongst licence holders who did not report a single catch during the season. A statistically representative random sample of 24 licence holders was selected from the list of all licence holders who did not report a catch (n=2,311), thus providing a 95% confidence level at 20% confidence interval. The randomly sampled individuals were all male, 42% in the <40 age bracket; 29% in the 41 – 60 age bracket and 29% in the >61 age bracket. 62.5% of the sampled individuals resided in Malta and 37.5% in Gozo.

9.2 The sampled licence holders were surveyed telephonically, with a request to explain reasons for not reporting a catch. 75% of survey participants stated that they did not practice live-capturing during the 2016 season whilst the remaining 25% reported being active. Survey participants who were not active during the season cited health issues (25%) and work commitments (50%). Participants who were active during the season cited the following reasons for not catching anything: active on less than five occasions (13%) and poor location of the live-capturing site (12%).

9.3 A comparative analysis of the results obtained during migration monitoring study with bag data provided by the WBRU of the Ministry for Sustainable Development, the Environment and Climate Change, was undertaken. It should be stated from the outset that the two sets of data were collected for different purposes, using very different methodologies, and therefore the magnitudes of the values are not directly comparable. However, the temporal trends can be expected to follow similar patterns, that is periods when higher mean daily counts were recorded during the present survey should broadly follow the days when higher numbers of birds were captured (and reported in the bag data) in the same year (2016). Whether the influx of the bird species follows the same temporal trend from year to year can only be confirmed through a longitudinal study of influx of the different bird species over a period of several years.

9.4 The data set provided by the WBRU for this comparison comprises the daily bag count of the seven bird species (as reported by live-capturers through a telephonic game reporting system) for the period 20 October to 31 December 2016.

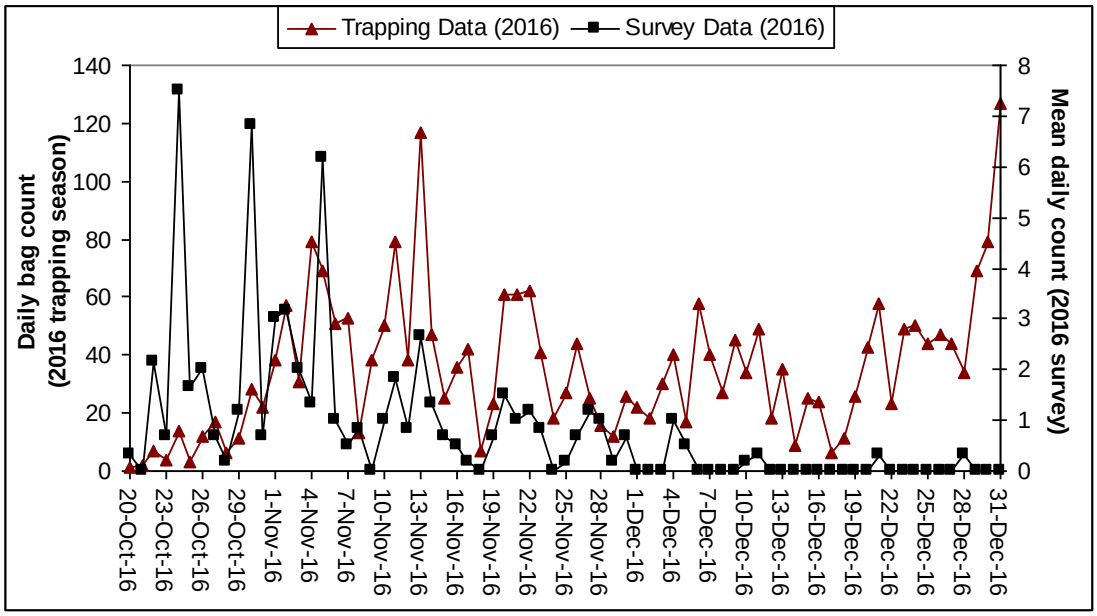
9.5 Graphical representations of the mean daily counts made during the present (2016) survey and the daily bag counts for the same time period (20 October – 31 December) in 2016 for each of the seven bird species were prepared to compare temporal trends among the two different data sets. In a graphical plot showing daily counts, a high variation in counts from day to day may overshadow temporal trends over the two-month period. To aid visual interpretation, a second set of analyses was undertaken by computing a moving average using a rolling 5-day period for the time series count data. This has the effect of smoothening out the day to day fluctuations and hence making longer-term trends in mean daily counts or daily bag counts more apparent, thus facilitating visual interpretation of temporal trends. Note that the analyses based on a moving average do not replace those based on the raw daily counts. Rather, the graphical representations showing a 5-day moving average should be seen in conjunction with those based on daily counts, which are also presented.

Linnet

9.6 The daily bag counts indicating the number of Linnet caught during the 2016 live-capturing season and the mean daily counts of Linnet made during the present (2016) survey are shown in Figure 12, while Figure 13 presents the 5-day moving average computed from these data. As already noted, the magnitude of the bag counts and those of the mean counts made in the 2016 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 12–13, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2016 survey are plotted on the right-side y-axis.

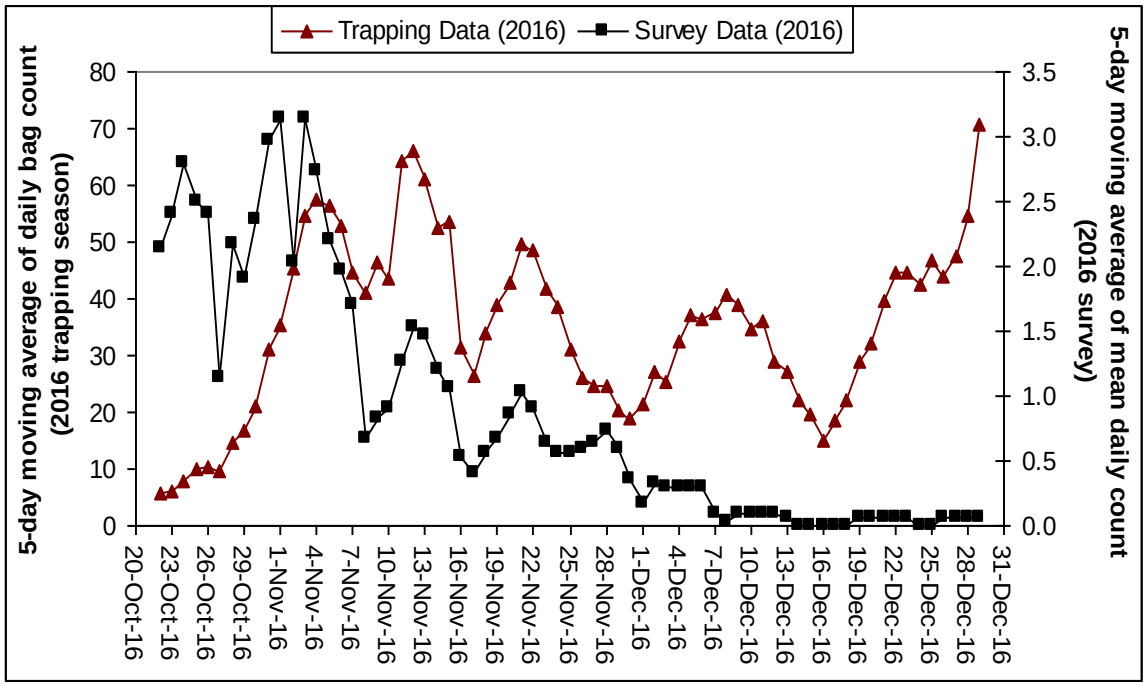
9.7 Overall, the highest daily counts made during the 2016 survey occurred in late October and mid-November, with counts declining thereafter such that very counts were made after 6 December. The 2016 bag data included periods of higher bag counts starting in early November and extending until the end of December. Thus, the general trend observed in the bag counts for 2016 is of higher counts from early November until end December, whereas the general trend observed in the daily counts recorded during the 2016 survey is of higher counts in the earlier part of the live-capturing season, up to around end November.

Figure 12 - Daily bag count of Linnet during 2016 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2017

Figure 13 - Moving average based on a 5-day rolling time period for the daily bag counts of Linnet during 2016 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



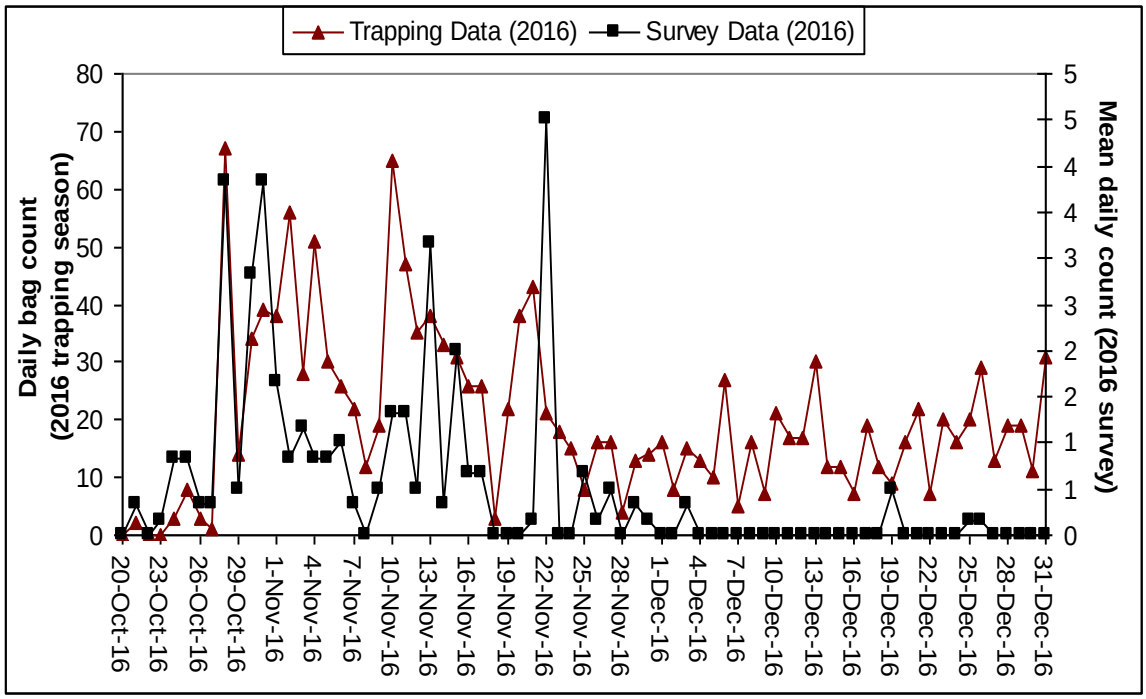
Source: Ecoserv, 2017

Chaffinch

9.8 The daily bag counts indicating the number of Chaffinch caught during the 2016 live-capturing season and the mean daily counts made during the present (2016) survey are shown in Figure 14, while Figure 15 presents the 5-day moving average computed from these data. As already noted, the magnitude of the bag counts and those of the mean counts made in the 2016 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 14–15, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2016 survey are plotted on the right-side y-axis.

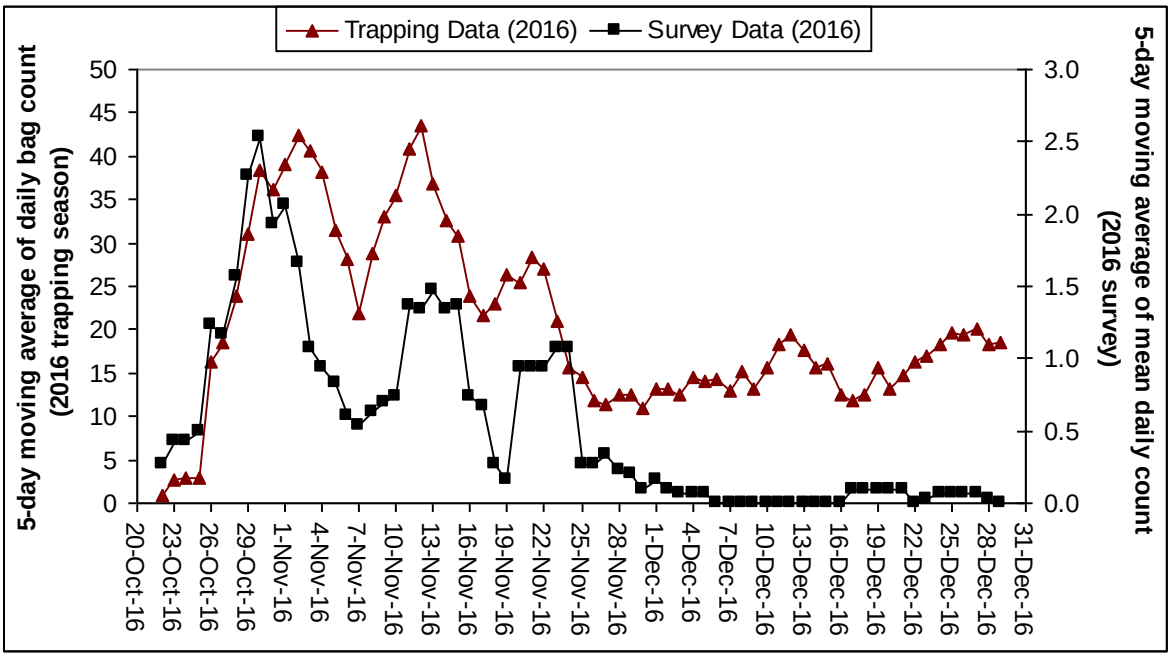
9.9 Overall, the highest daily counts recorded during the 2016 survey were made in late October and late November, with most days in December being characterised by zero counts. The highest bag counts for the 2016 season were also reported between late October and late November, while lower bag counts were recorded in December. Thus, the general trend observed in the bag counts for 2016 and daily counts recorded during the 2016 survey is of higher counts in the early part of the live-capturing season, up to around end November. Both the number of Chaffinch observed per day during the 2016 survey and the number captured declined thereafter.

Figure 14 - Daily bag count of Chaffinch during 2016 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2017

Figure 15 - Moving average based on a 5-day rolling time period for the daily bag counts of Chaffinch during 2016 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



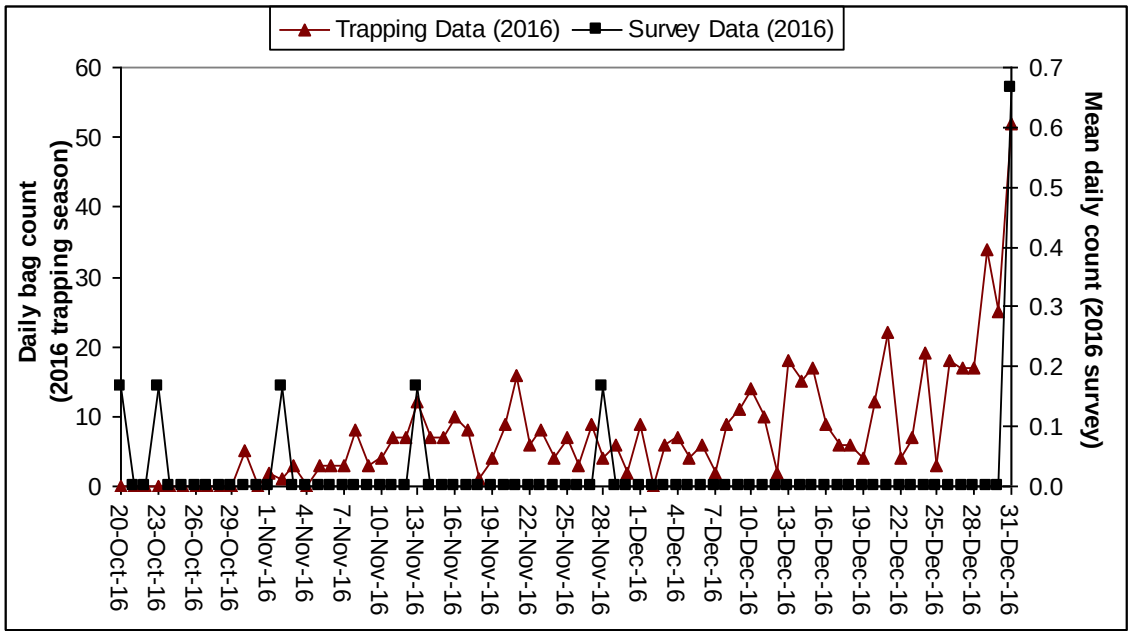
Source: Ecoserv, 2017

Greenfinch

9.10 The daily bag counts indicating the number of Greenfinch caught during the 2016 live-capturing season and the mean daily counts of Greenfinch made during the present (2016) survey are shown in Figure 16, while Figure 17 presents the 5-day moving average computed from these data. As already noted, the magnitude of the bag counts and those of the mean/total counts made in the 2016 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 16–17, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2016 survey are plotted on the right-side y-axis.

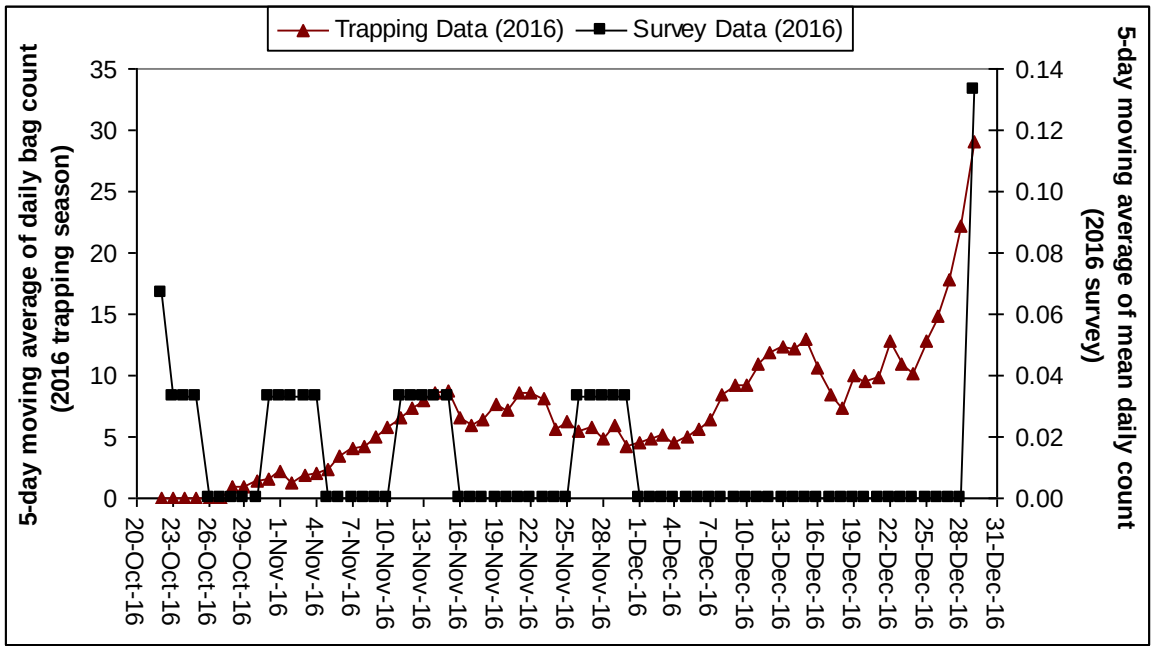
9.11 Very low counts of Greenfinch were made during the 2016 survey, with no individuals of this species recorded on most days. Thus inferences on temporal trends in migration rates cannot be drawn based on this data. During the 2016 season higher bag counts were recorded between mid-November and end December, with an increase in counts towards the end of December, and with the highest bag count registered on 31 December, which coincided with the highest mean count made during the 2016.

Figure 16 - Daily bag count of Greenfinch during 2016 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2017

Figure 17 - Moving average based on a 5-day rolling time period for the daily bag counts of Greenfinch during 2016 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



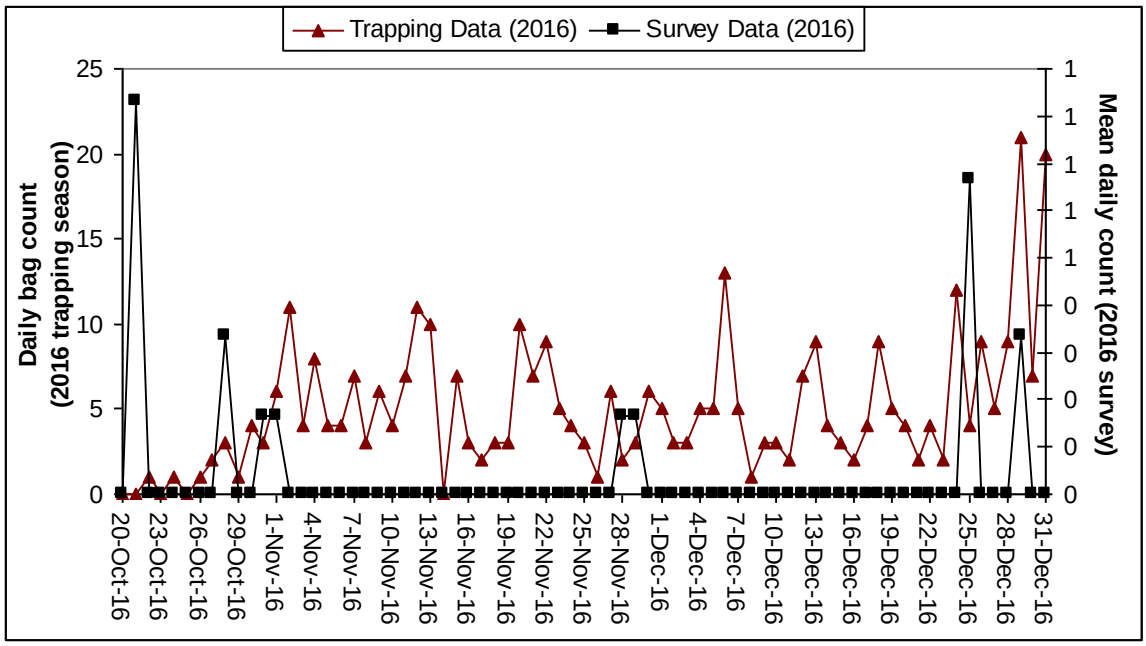
Source: Ecoserv, 2017

Siskin

9.12 The daily bag counts indicating the number of Siskin caught during the 2016 live-capturing season and the mean daily counts of Siskin made during the present (2016) survey are shown in Figure 18, while Figure 19 presents the 5-day moving average computed from these data. As already noted, the magnitude of the bag counts and those of the mean counts made in the 2016 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 18-19, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2016 survey are plotted on the right-side y-axis.

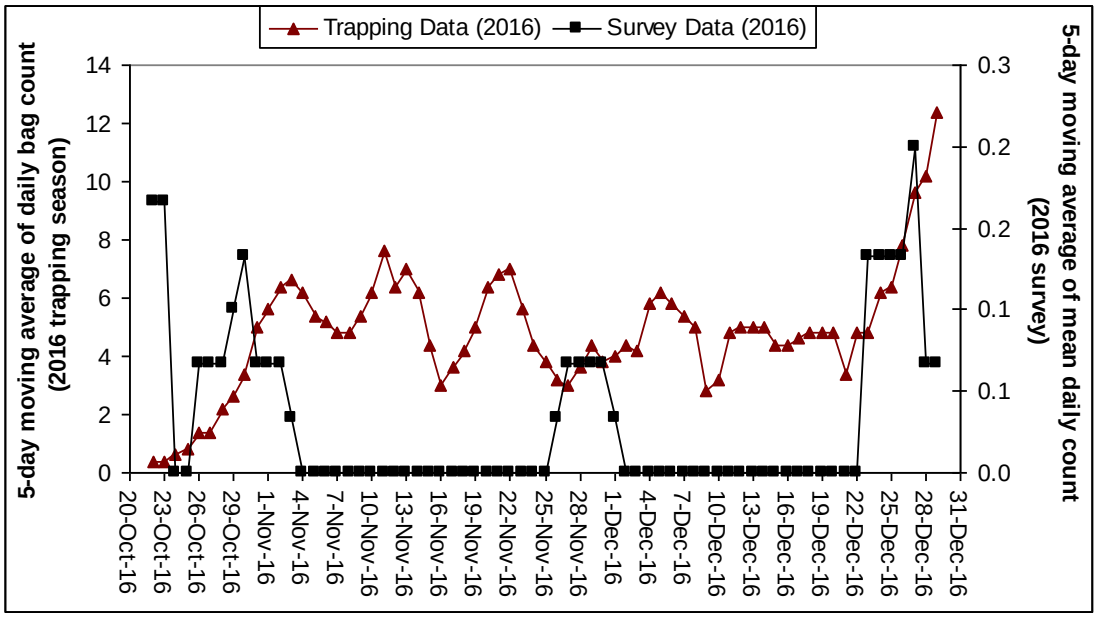
9.13 Overall, low counts for Siskin were recorded during the 2016 survey; these were made in late October, late November and late December, with zero counts being recorded during most of November and December. Thus inferences on temporal trends in migration rates cannot be drawn based on this data. The 2016 bag counts increased towards the beginning of November and remained steady until late December, with higher bag counts reported at the end of December.

Figure 18 - Daily bag count of Siskin during 2016 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2017

Figure 19 - Moving average based on a 5-day rolling time period for the daily bag counts of Siskin during 2016 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



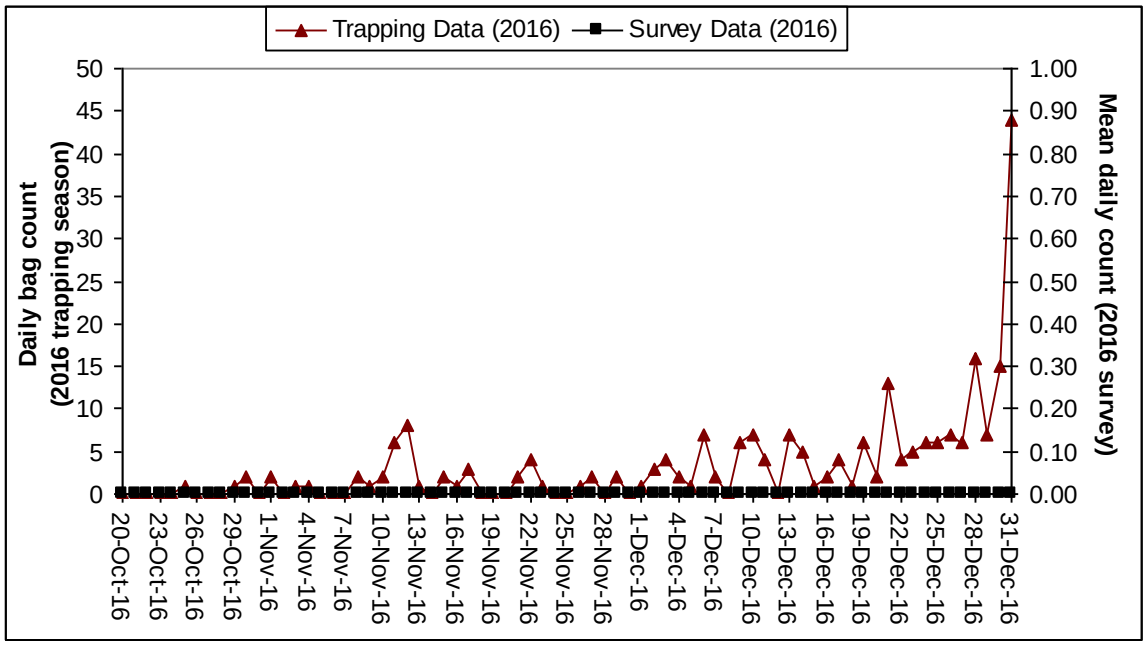
Source: Ecoserv, 2017

Goldfinch

9.14 The daily bag counts indicating the number of Goldfinch caught during the 2016 live-capturing season and the mean daily counts of Goldfinch made during the present (2016) survey are shown in Figure 20, while Figure 21 presents the 5-day moving average computed from these data. As already noted, the magnitude of the bag counts and those of the mean counts made in the 2016 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 20-21, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2016 survey are plotted on the right-side y-axis.

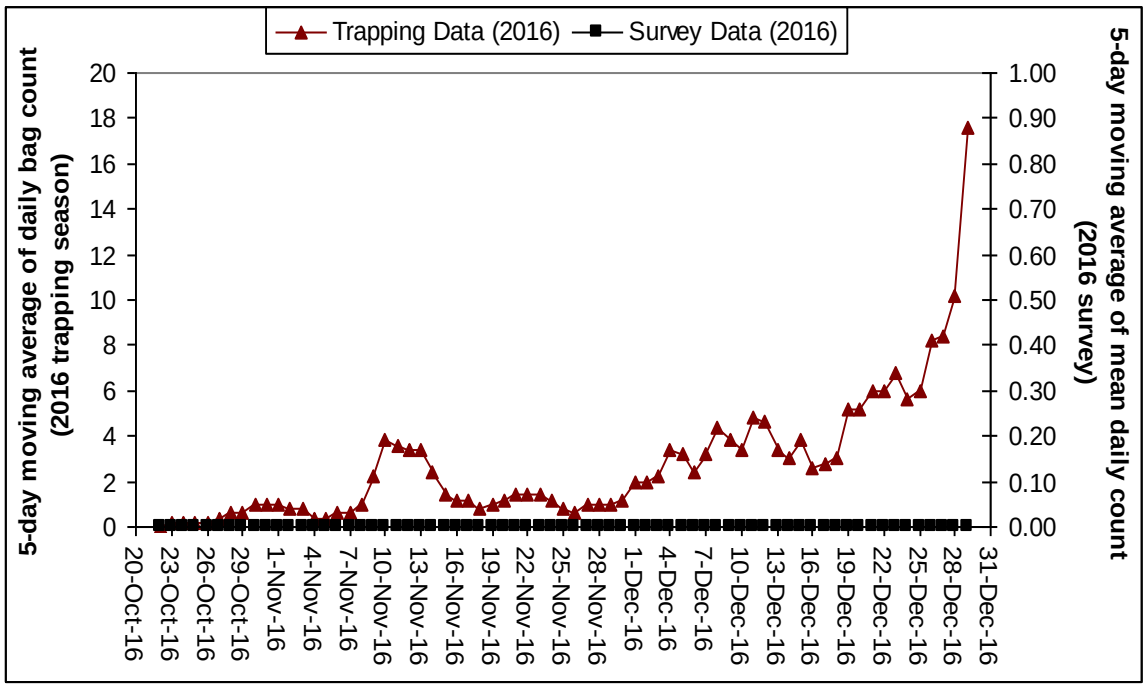
9.15 No Goldfinch individuals were recorded during the 2016 survey. Thus inferences on temporal trends in migration rates cannot be drawn based on this data. In the 2016 season, bag counts were very low between October and November, and increased slightly during December, especially towards the end of the month.

Figure 20 - Daily bag count of Goldfinch during 2016 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2017

Figure 21 - Moving average based on a 5-day rolling time period for the daily bag counts of Goldfinch during 2016 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



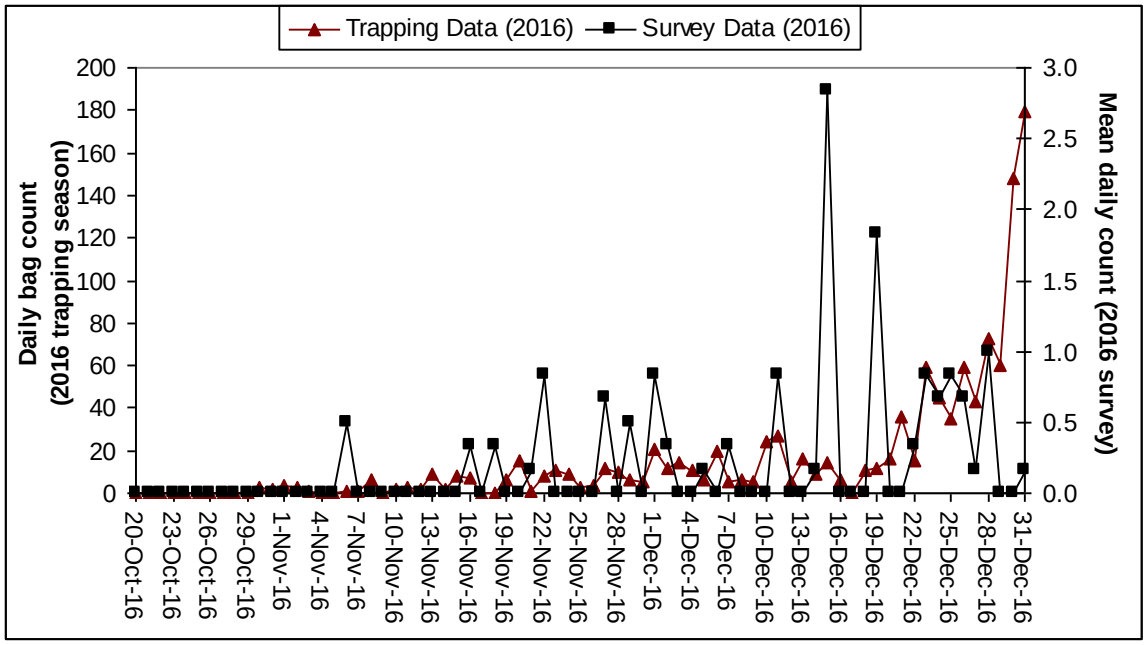
Source: Ecoserv, 2017

Serin

9.16 The daily bag counts indicating the number of Serin caught during the 2016 live-capturing season and the mean daily counts of Serin made during the present (2016) survey are shown in Figure 22, while Figure 23 presents the 5-day moving average computed from these data. As already noted, the magnitude of the bag counts and those of the mean/total counts made in the 2016 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 22-23, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2016 survey are plotted on the right-side y-axis.

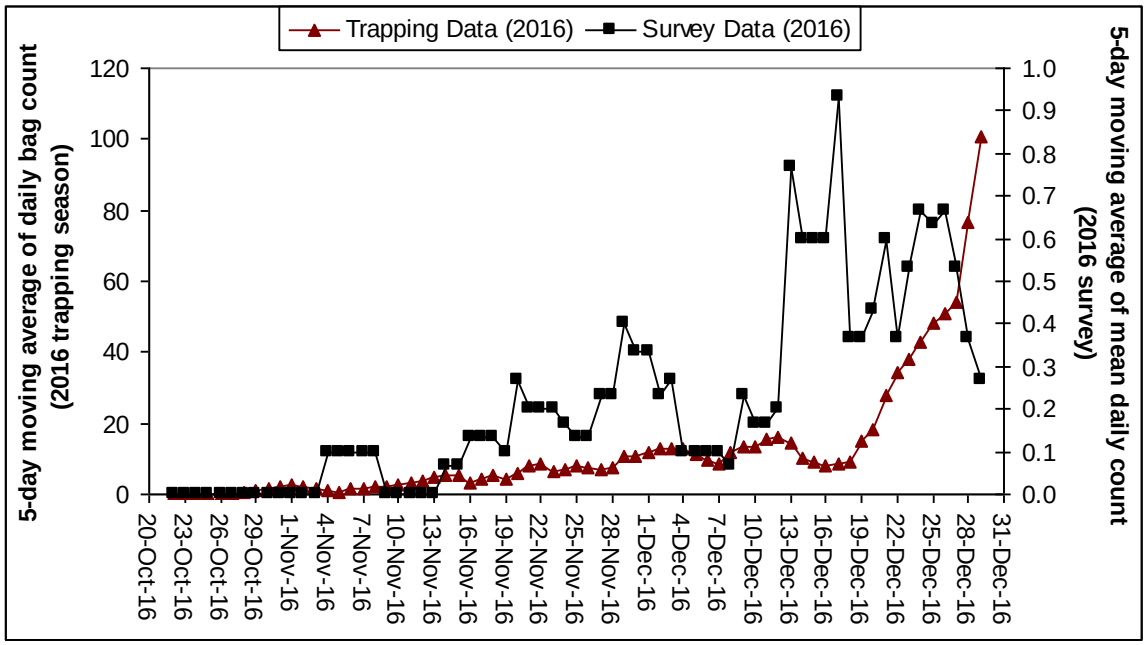
9.17 Overall, the daily counts recorded during the 2016 survey increased in mid-November with the highest daily counts recorded in December. The 2016 bag count data coincided with the daily counts recorded during the 2016 survey, with counts increasing slightly in November and then from mid-December onwards. Thus, the general trend observed in the bag counts for 2016 and daily counts recorded during the 2016 survey is of slightly higher counts in the later part of the live-capturing season, particularly in December.

Figure 22 - Daily bag count of Serin during 2016 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2017

Figure 23 - Moving average based on a 5-day rolling time period for the daily bag counts of Serin during 2016 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



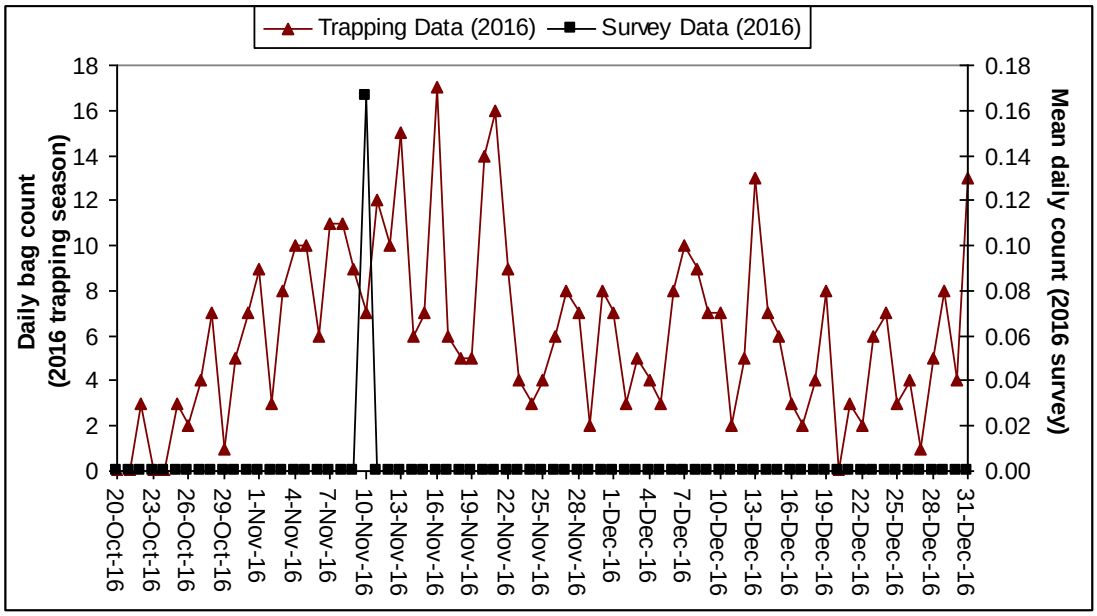
Source: Ecoserv, 2017

Hawfinch

9.18 The daily bag counts indicating the number of Hawfinch caught during the 2016 live-capturing season and the mean daily counts of Hawfinch made during the present (2016) survey are shown in Figure 24, while Figure 25 presents the 5-day moving average computed from these data. As already noted, the magnitude of the bag counts and those of the mean counts made in the 2016 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 24-25, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2016 survey are plotted on the right-side y-axis.

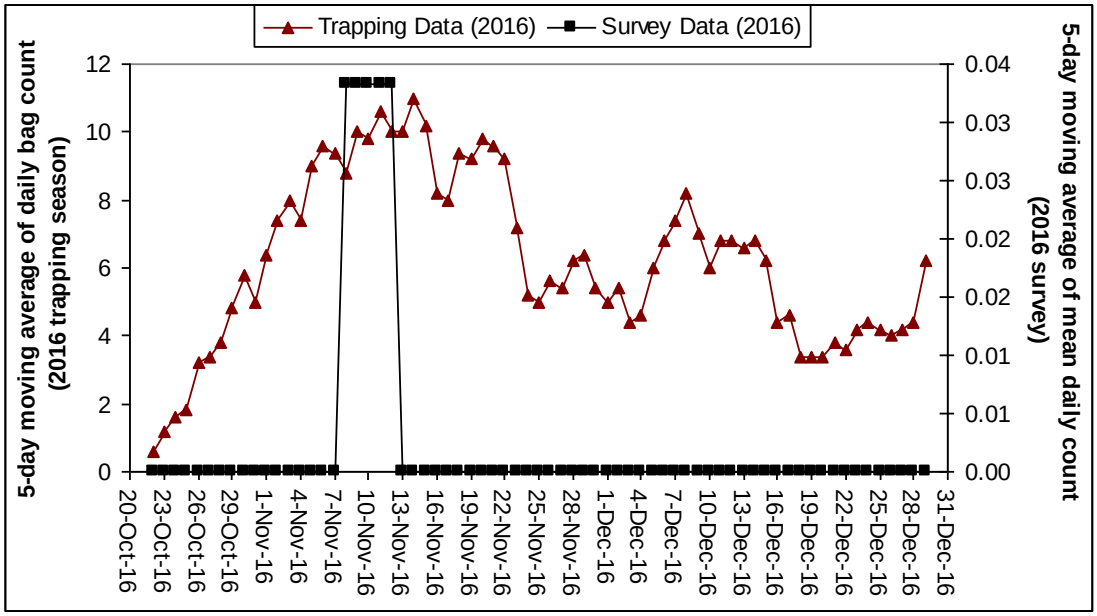
9.19 Only a single count for Hawfinch was recorded during the 2016 survey. Thus inferences on temporal trends in migration rates cannot be drawn based on this data. The 2016 bag counts were highest in mid-November and early December.

Figure 24 - Daily bag count of Hawfinch during 2016 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2017

Figure 25 - Moving average based on a 5-day rolling time period for the daily bag counts of Hawfinch during 2016 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2016 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2017

Staff training

10.1 Prior to the start of the season, enforcement officials detailed to carry out controls in the field received specialised training on enforcement priorities and techniques organised by the Wild Birds Regulation Unit on 11 October 2016 (around 40 officers) in Malta (Figure 26) and on 17 October 2016 in Gozo (Figure 27). The attendees were trained in basic field ornithology and avian ecology, as well as on the relevant regulations and licence conditions, inspection techniques, principles of surveillance and counter-poaching operations and wildlife crime detection and prosecution techniques.

Figure 26: Training seminar held in Malta on 11 October 2016

Figure 27: Training seminar held in Gozo on 17 October 2016

Overall deployment and field surveillance

10.2 The Conservation of Wild Birds (Framework for Allowing a Derogation Opening an Autumn Live-Capturing Season for Finches) Regulations (S.L.549.93) stipulates, under Article 8(3), that for every one thousand (1,000) licences issued in accordance with these regulations, there shall be a minimum of seven (7) officers and/or marshals on duty during all hours for which an Autumn live-capturing season is open. If applicable, outside these hours, at least two (2) police officers and/or marshals shall be on duty during the hours of daylight. The Regulations also specify, under Article 8(4), that the Police shall continue to carry out on-the-spot checks until at least two weeks following the end of an Autumn live-capturing season, in order to prevent illegal capture. Following the closure of an Autumn live capturing season, for every one thousand (1,000) Autumn live-capturing licences issued that year, a statutory minimum of three (3) police officers shall be on duty during the hours of daylight.

10.3 Given that there were 3,844 licences to capture finches, this translates into a minimum requirement of 27 officers during permitted hours of the derogation. However, also taking into account that in parallel with the finches live-capturing season there was also a separate derogation concerning live-capturing of Golden Plover and Song Thrush, and that the total number of licensed persons participating in either one or both derogations was 4,123[32], the total deployment requirement translated into a minimum of 29 officers. The Maltese authorities opted to exceed this requirement to ensure the strictest supervision possible.

10.4 During the Autumn 2016 live capturing season (20 October to 31 December 2016), the enforcement authorities deployed a total overall complement of 85 officers to oversee and supervise the parameters of the derogation (Table 14).

[32] 3,844 finch live capturing licences + 997 Golden Plover and Song Thrush licences – 718 persons in possession of both categories of licence = 4,123 licensed live-capturers with a special license

Table 14: Deployment of enforcement officers during the Autumn 2016 live-capturing season

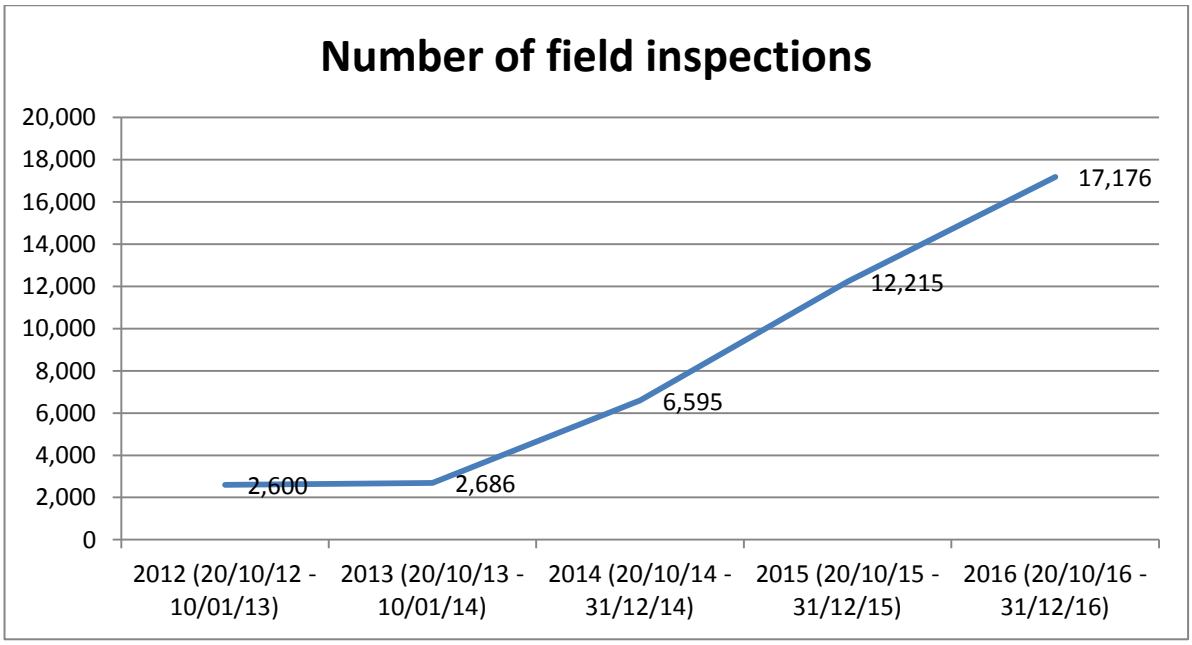
Entity	Number of officers	Duties
Administrative Law Enforcement Unit (ALE) of the Police	24	Field patrols, surveillance, inspections, investigations, prosecution
District police officers seconded to the ALE	37	Field patrols, surveillance, inspections, investigations, prosecution
Armed Forces of Malta	22	Field patrols and surveillance
Wild Birds Regulation Unit	2	Verification of compliance with registration conditions; field inspection of sites; assistance to police in prosecution processes, other expert services
Total	85	

Source: Wild Birds Regulation Unit, 2017

10.5 Police and Armed Forces of Malta officers maintained a daily field deployment that ranged between a maximum of 83 officers and a minimum of 44 officers in the field at any point in time from 05:00hrs to 21:30hrs, effectively covering live-capturing activity times. This excludes all other non-field staff assigned on-duties related to supervision of the live-capturing season, or field staff on shift rotation.

10.6 During the period of the derogation these officers carried out 17,176 on-site inspections (14,892 in Malta and 2,284 in Gozo) in various localities around the Maltese Islands, which represents an increase in inspections in comparison with the number of inspections conducted during the previous autumn live-capturing season (n_{2015}=12,215), an almost three-fold increase from 2014 (n_{2014}=6,595) and a seven-fold increase when compared with the 2012 (n_{2012}=2,600) and 2013 live-capturing derogations (n_{2013}=2,686), as shown in Figure 28 below.

Figure 28 – Number of site inspections carried out during autumn live-capturing derogations



Source: Wild Birds Regulation Unit and Malta Police Force, 2017

10.7 In addition to site inspections, a total of 2,832 spot-checks (2,037 in Malta and 795 in Gozo) were conducted on individual licensees whilst they were carrying out their activity, which implies that more than two-thirds of all licensees (68.69% of 4,123 persons in possession of either the finches or Golden Plover and Song Thrush or both licences) were physically inspected at least once during the season. The number of spot-checks carried out in 2016 increased significantly when compared to 2015 [n_{2015}=1,888] and increased three-fold when compared to the amount of spot-checks carried out during the 2014 autumn live-capturing season (n_{2014}=956).

10.8 Throughout the autumn live-capturing season WBRU Specialist Enforcement Branch was involved and had a leading role in a number of enforcement initiatives. Inspections were carried out independently by WBRU as well as jointly with ALE and Gozo Police. Officers utilized various techniques, including vehicular patrols, covert observation, stationary observation posts, foot patrols, physical inspections and spot-checks on individual live-capturers. In some cases follow-up inspections at residences and commercial outlets were also carried out. Two major investigations were carried out jointly between the ALE, Gozo Police and WBRU. These investigations were initiated following two reports filed by CABS and BirdLife Malta regarding possible illegal live-capturing sites around Malta

and Gozo. Following these reports, the WBRU Specialist Enforcement Branch conducted 18 field inspections covering multiple live-capturing sites and conducted various covert observation operations (an increase of 11 inspections from the previous year). During these inspections a total of eight bird callers and 47 finches were seized whereas four unregistered illegal live-capturing sites were detected.

10.9 Further inspections were also carried out after the closure of the autumn live-capturing season until the end of January 2017 by the ALE/Gozo Police core staff complement, effectively extending the statutory minimum spot-check requirement of two weeks to a full month following closure of the live-capturing season.

Table 15 – Daily Patrol Returns during Autumn Live-Capturing Season

Date	Number of officers deployed 0500-1500 (ALE / District / AFM)		Number of officers deployed 1500-2100 (ALE / District / AFM)		Night patrols conducted		Number of field inspections conducted (visits to specific areas)		Number of spot-checks on individual hunters		Offences detected (number of cases and nature of offence)		Number of persons charged and nature of action taken	
	Malta	Gozo	Malta	Gozo	Malta	Gozo	Malta	Gozo	Malta	Gozo	Malta	Gozo	Malta	Gozo
20-Oct	29	7	26	8	N	N	204	30	86	12	0	0	0	0
21-Oct	26	9	25	2	N	N	204	30	23	29	0	0	0	0
22-Oct	27	2	27	2	N	N	204	30	54	12	0	0	0	0
23-Oct	30	9	29	6	N	N	204	30	55	27	0	0	0	0
24-Oct	29	2	27	9	N	N	204	30	63	20	0	0	0	0
25-Oct	28	9	28	5	N	N	204	30	54	34	0	0	0	0
26-Oct	27	3	26	2	N	N	204	30	56	23	0	0	0	0
27-Oct	27	9	27	2	N	N	204	30	41	35	0	0	0	0
28-Oct	25	9	25	6	N	N	204	30	29	17	0	0	0	0
29-Oct	27	2	28	2	N	N	204	30	13	13	0	0	0	0
30-Oct	30	2	26	6	N	N	204	30	89	11	0	0	0	0
31-Oct	27	8	27	5	N	N	204	30	59	30	0	0	0	0
01-Nov	29	10	27	10	N	N	204	30	58	14	0	0	0	0
02-Nov	27	3	28	9	N	N	204	30	25	22	1: Use of bird caller	0	1	0
03-Nov	27	7	27	9	N	N	204	30	34	16	0	0	0	0
04-Nov	29	5	27	5	N	N	204	30	28	24	0	0	0	0
05-Nov	26	8	27	5	N	N	204	30	15	9	0	0	0	0
06-Nov	26	5	26	6	N	N	204	30	25	22	0	0	0	0
07-Nov	27	4	26	8	N	N	204	30	43	5	0	0	0	0
08-Nov	28	3	28	2	N	N	204	30	35	8	0	0	0	0

09-Nov	27	6	27	2	N	N	204	30	4	2	0	0	0	0
10-Nov	27	6	25	2	N	N	204	30	8	29	0	1: Use of bird caller	0	1
11-Nov	27	2	27	2	N	N	204	30	35	10	0	0	0	0
12-Nov	27	11	27	5	N	N	204	30	36	3	0	0	0	0
13-Nov	28	9	27	3	N	N	204	30	13	13	0	0	0	0
14-Nov	26	13	26	2	N	N	204	30	37	5	1: Use of bird caller 2: Use of bird caller 3: Using in excess of 10 golden plover / song thrush live- decoys	1: Using in excess of 21 live decoys 2: Using in excess of 21 live decoys	3	2
15-Nov	24	14	26	10	N	N	204	30	21	11	0	0	0	0
16-Nov	27	2	28		N	N	204	30	18	0	1: Trapping on an un-registered site	0	1	0
17-Nov	27	10	26	9	N	N	204	30	24	8	0	0	0	0
18-Nov	26	7	25	2	N	N	204	30	5	7	0	0	0	0
19-Nov	26	2	25	2	N	N	204	30	13	3	0	0	0	0

20-Nov	29	5	28	8	N	N	204	30	25	16	0	1: Using in excess of 21 live decoys & trapping on an unregistered site	0	1
21-Nov	27	6	27	6	N	N	204	30	18	8	1: Trapping during unpermitted hours	0	1	0
22-Nov	29	5	27	1	N	N	204	30	19	17	0	0	0	0
23-Nov	28	5	28	5	N	N	204	30	4	8	1: Use of bird caller 2:Use of bird caller	0	2	0
24-Nov	28	14	28	7	N	N	204	30	18	8	0	0	0	0
25-Nov	27	9	26	9	N	N	204	30	10	6	0	0	0	0
26-Nov	28	3	28	3	N	N	204	30	8	2	0	0	0	0
27-Nov	28	2	28	2	N	N	204	52	15	6	1: Use of bird caller	0	1	0
28-Nov	28	10	24	7	N	N	204	30	13	1	0	0	0	0
29-Nov	26	10	26	6	N	N	204	30	8	2	0	0	0	0
30-Nov	25	5	27	2	N	N	204	30	6	13	0	0	0	0
01-Dec	27	5	26	5	N	N	204	30	4	2	0	0	0	0
02-Dec	27	7	26	7	N	N	204	30	1	8	0	0	0	0
03-Dec	24	9	25	6	N	N	204	30	28	3	0	0	0	0
04-Dec	27	8	25	8	N	N	204	30	2	23	0	0	0	0

05-Dec	26	3	25	6	N		204	30	0	3	1: Use of bird caller	0	1	0
06-Dec	26	5	24	2	N	N	204	30	7	5	0	0	0	0
07-Dec	24	2	24	2	N	N	204	30	1	2	0	0	0	0
08-Dec	28	9	26	2	N	N	204	30	0	3	1: Use of bird caller 2: Use of bird caller 3: Use of bird caller	0	3	0
09-Dec	25	2	24	2	N	N	204	30	6	3	1: Use of bird caller 2: Use of bird caller 3: Use of bird caller	0	3	0
10-Dec	25	8	25	2	N	Y	204	33	4	15	1: Use of bird caller	1: Use of more than two pairs of clap-nets	1	0
11-Dec	25	11	26	8	N	N	204	89	0	4	1: Trapping during unpermitted hours	0	1	0
12-Dec	25	7	27		N	N	204	19	0	7	0	0	0	0
13-Dec	29	2	27	2	N	N	204	53	0	2	1: Use of bird caller	0	1	0
14-Dec	26	5	24	2	N	N	204	15	5	6	0	0	0	0

15-Dec	25	4	26	2	N	N	204	53	7	3	0	0	0	0
16-Dec	25	2	25	2	N	N	204	28	1	6	1: Use of bird caller	1: Use of bird caller 2: Use of bird caller	1	2
17-Dec	24	4	23	4	N	N	204	30	0	0	1: Use of bird caller	0	1	0
18-Dec	28	2	28	2	N	N	204	28	0	5	0	0	0	0
19-Dec	25	12	25	9	N	N	204	62	0	0	0	0	0	0
20-Dec	20	2	21	2	N	N	204	17	0	3	0	1: Use of bird caller 2: Use of bird caller 3: Use of bird caller	0	3
21-Dec	20	5	21	5	N	N	204	58	0	1	0	0	0	0
22-Dec	20	2	21	2	N	N	204	30	0	5	0	0	0	0
23-Dec	20	6	21	2	N	N	204	56	0	2	0	0	0	0
24-Dec	20	4	21		N	N	204	30	0	0	0	0	0	0
25-Dec	20		21		N		204	Nil	0	0	0	0	0	0
26-Dec	20	10	21	10	N	N	204	30	0	7	0	0	0	0
27-Dec	20	9	21	9	N	N	204	47	0	0	0	0	0	0
28-Dec	20	6	21	6	N	N	204	41	0	4	0	0	0	0
29-Dec	20		21		N	N	204	30	0	0	0	0	0	0
30-Dec	20	8	21	8	N	N	204	13	0	1	0	0	0	0
31-Dec	20	4	21		N	N	204	30	0	0	0	0	0	0
	25.7	6.1	25.4	4.8	0	1	14,892	2,284	2,037	795	21	11	21	9
	Average	Average	Average	Average	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total

10.10 During inspections, Police officers were responsible for ensuring the lawful operation of live-capturing practices. They were, *inter alia*, instructed to:

- Verify that live-capturers were in possession of all requisite documents;
- Verify that any captured birds had been immediately reported via mobile phone and fitted with a single use ring;
- Ensure compliance with bag limits and time restrictions;
- Ensure that no species, other than those that could be captured under the specific licences were being targeted;
- Verify that the live-capturing site in use was the one that had been approved by the WBRU;
- Verify that the conditions of the licence, such as the maximum limit of decoys present on site and the maximum number of allowed clap-nets and their respective sizes were being complied with; and
- Ensure compliance with the provisions of the Conservation of Wild Birds Regulations (S.L. 549.42) and other applicable legislation.

10.11 In order to facilitate the conduct of their duties, enforcement officers had 11 vehicles and four horses at their disposal. All of these were equipped with radio communication facilities, in order to enable contact with police officers from other sections/districts, and in order to allow for continuous liaison and coordination with the Police Headquarters. Police officers were also equipped with binoculars to facilitate their investigations on the ground. Police were also provided with a list of licensed live-capturers and access to the real-time licensing and reporting database which facilitated the immediate identification of any live-capturers not in possession of the requisite Autumn live-capturing licence as well as the immediate verification of telephonic reports of birds caught.

10.12 Patrolling officers were also provided with portable tablet computers with a pre-installed Geographic Information System, GPS link capability and geo-tagging photography capability. These devices were loaded with a database of the spatial location of registered trapping sites and the personal details of individual licensees registered on each individual site. During inspections, police officers made extensive use of these devices which have proven to be a very effective way of instantly verifying regulatory information pertaining to each licensee's permitted location. In

the past, verification of live-capturers' registration and licensing information necessitated time-consuming retrieval of physical documentation and site plans from office archives. With the introduction of a digital GPS-enabled system this process takes only a few seconds. Due to the introduction of this technology, enforcement officers were able to dedicate considerable more time to actual field surveillance duties, as opposed to documentation retrieval.

10.13 Further information concerning enforcement deployment and relevant checks conducted during field patrols and inspections is found in the video available under the following link: https://www.youtube.com/watch?v=JNeUFfX6Uqc

Infringements detected

10.14 During the inspections carried out by enforcement staff throughout the derogation period, a total of 31 live-capturing-related infringements that qualified for legal action were detected. The nature of these infringements is outlined in Table 15 below, which also presents comparison with the same statistics for live-capturing derogations implemented in 2013 (Golden Plover and Song Thrush only), 2014 and 2015. Legal action is in the process of being taken against the 29 offenders.

Table 16 – Offences disclosed during autumn live-capturing seasons

	2013 (20.10.13–10.01.14)			2014 (20.10.14–31.12.14)			2015 (20.10.15–31.12.15)			2016 (20.10.16–31.12.16)			
	Cases in Malta	Cases in Gozo	Total number of cases	Cases in Malta	Cases in Gozo	Total number of cases	Cases in Malta	Cases in Gozo	Total number of cases	Cases in Malta	Cases in Gozo	Total number of cases	
Trapping for protected birds	13	5	18	0	0	0	2	0	2	0	0	0	Decrease
Use of illegal means (eg. cage traps; artificial light; vertical nets; decoys of protected birds; pre-recorded bird calls)	10	4	14	17	3	20	27	6	33	17	6	23	Decrease
Trapping using nets of prohibited mesh size	6	4	10	0	0	0	0	0	0	0	0	0	No Change
Using in excess of 21 live (finches) decoys while trapping	N/A	N/A	N/A	5	4	9	6	3	9	0	3	3	Decrease
Using in excess of 10 live (Song Thrush or Golden Plover) decoys while trapping	0	0	0	0	0	0	0	0	0	1	0	1	Increase

Trapping during unpermitted hours	0	0	0	0	0	0	0	1	1	2	0	2	Increase
Trapping within bird sanctuaries	0	0	0	1	0	1	0	0	0	0	0	0	No Change
Trapping on unregistered sites	0	0	0	2	0	2	4	1	5	1	2	3	Decrease
Trapping using unmarked decoys	2	0	2	9	6	15	1	0	1	0	0	0	Decrease
Exceeding the seasonal quota of captured birds	0	0	0	0	0	0	0	0	0	0	0	0	No Change
Failure to report captured bird	0	0	0	4	0	4	2	0	2	0	0	0	Decrease
Trapping without licence	7	5	13	3	0	3	8	1	9	0	0	0	Decrease
Total	38	18	57	41	13	54	50	12	62	20	11	31	Decrease
Number of persons apprehended	16	5	21	29	9	38	46	12	58	21	9	30[33]	Decrease

Source: Wild Birds Regulation Unit & Malta Police Force, 2017

[33] An unregistered trapping site was found to be active however since perpetrator was unknown no charges could be pressed.

10.15 When compared with the 2013, 2014 and 2015 live-capturing seasons, the rate of disclosure for most types of violations in 2016 decreased, with the exception of the use of more than ten live-decoys (Song Thrush or Golden Plover) whilst trapping [n=1]) and trapping during unpermitted hours (n=2). The above decrease in disclosed illegalities is, apart from improvements in field deployment, attributable also to the increase in legal deterrents against abuse. The change in the minimum and maximum penalties for all categories of offences involving illegal killing, trapping and trade in wild birds is summarised in Table 16 below. The same levels of deterrent that had increased exponentially by 2014 were also applicable during the 2016 live-capturing season. This decrease is also attributable to a much higher level of intensity of inspections and spot-checks in 2016 in comparison with 2015, and 2014 (two-fold increase).

Table 17 – Increase in penalties for illegal targeting of protected species

1st count offence	2012	2013	2014	2015	2016
Min fine 1st count offence (Euros)	232.94	500	5,000	5,000	5,000
Min imprisonment (months)	0	0	12	12	12
Min term of suspension of licence (months)	12	24	Permanent	Permanent	Permanent
Max fine (Euros)	4,658.75	5,000	5,000	5,000	5,000
Max imprisonment (months)	0	0	12	12	12
Max term of suspension of licence (months)	36	60	Permanent	Permanent	Permanent

2nd count offence	2012	2013	2014	2015	2016
Minimum fine 2nd count offence (Euros)	465.87	1,000	10,000	10,000	10,000
Minimum imprisonment (months)	2	6	12	12	12
Minimum term of suspension of licence (months)	Permanent	Permanent	Permanent	Permanent	Permanent
Maximum fine (Euros)	9,317.49	10,000	10,000	10,000	10,000
Maximum imprisonment (months)	24	24	24	24	24
Maximum term of suspension of licence (months)	Permanent	Permanent	Permanent	Permanent	Permanent

Source: Wild Birds Regulation Unit, 2017

10.16 During the past trapping season the Malta Police Force and the WBRU Specialist Enforcement Branch jointly investigated three major illegal reports on a nationwide scale. Such reports were filed by CABS and BirdLife Malta respectively.

Enforcement cooperation with NGOs

10.17 On 31st October 2016 and separately on 28th November 2016, the Committee Against Bird Slaughter (CABS) and BirdLife Malta respectively, submitted the coordinates of a total of 179 suspected active trapping sites for necessary checks and verification by the Wild Birds Regulation Unit. The NGOs identified these locations on the basis of an aerial survey. Following checks performed on the site registration and screening records, it transpired that a total of 68 locations reported by the NGOs did not pertain to registered live-capturing sites, whilst the rest were found to have been registered in accordance with applicable legislation. Subsequent to verification of registration records, on-site inspections were carried out by WBRU on all reported locations.

10.18 With the exception of 4 unregistered sites that were found to have signs of potential recent use, the unregistered locations reported by the NGOs contained old trapping sites which were found to have not been used for several years (Figure 29), but which were nonetheless still visible and identifiable as a result of aerial survey performed by the NGOs and were thus suspected as being active.

Figure 29: Disused trapping site found next to the Ħaġar Qim Temple area, which was initially suspected as being "active" following NGO aerial survey reports.

10.19 As a direct follow up to the reports made by the NGOs, an in addition to routine enforcement operations, Inspectors of the Wild Birds Regulation Unit conducted six joint inspections together with the Gozo Police, which resulted in the identification and dismantlement of three active illegal sites. Surveillance of these sites led to the identification and subsequent prosecution of two persons found using the sites. Similar operations (four joint patrols) were also carried out on mainland Malta, resulting in identification and investigation of a person found using an unregistered site.

10.20 In another instance of collaboration between the enforcement authorities and NGOs, the authorities responded to reports of alleged illegal use of pre-recorded bird callers, including at night, in several locations. Each report was investigated and followed by inspection. As a result of the authorities' routine inspections as well as NGO reports, the authorities successfully identified and dismantled a total of 26 electronic devices during the 2016 live-capturing season, and took necessary legal action against 23 individuals caught using these devices.

10.21 In addition to inspections performed between 0500 hrs and 2130 hrs, a night surveillance operation was carried out on 20th December 2016, focusing specifically on the locations reported by CABS. This night inspection however did not result in the identification of any illegal devices on that occasion.

10.22 In all, during the 2016 live-capturing season, 23 persons were subjected to an automatic administrative fine of €250 each for illegal use of pre-recorded bird calls whilst live-capturing. All illicit devices were seized and destroyed and all fines were paid within 21 days from notification. A further seven persons apprehended during the 2016 live-capturing season were subject to criminal prosecution for various trapping-related offences as detailed in Table 15. By the time of compilation of this report, all cases were still *sub judice*.

11. CONCLUSIONS

11.1 The application of finch live-capturing derogation in autumn 2016 was preceded by a series of profound analyses that considered all relevant legal, scientific and technical aspects pertaining to this derogation, as well as by an open and transparent discussion with all stakeholders.

11.2 As a result of these processes, the decision to apply derogation was made with full confidence that the following critical prerequisites will be met, without reservation:

- The derogation satisfies all the relevant parameters of the Birds Directive, and specifically the parameters stipulated in Article 9(1)(c);

  and

- The actual implementation of the derogation on the ground ensures that the relevant legal parameters enacted in pursuance of point (a) above are respected in the field through an elaborate and robust enforcement regime.

11.3 The Maltese authorities have subsequently ensured that the above two prerequisites were met in practice. After ascertaining that there is no other satisfactory solution other than the application of this limited and strictly controlled derogation, the authorities put into place a robust legal and regulatory regime that ensured that the scientific considerations pertaining to small numbers and conservation status of the species in question were being implemented in practice and that the relevant parameters of the derogation were being respected in full.

11.4 Supervision on the ground was ensured through deployment of appropriately trained and suitably equipped field officers that have doubled the intensity of field inspections in comparison with similar derogations in 2013, 2014 and 2015 and further increased upon the already unprecedented intensity of enforcement attained during the 2014 finch live-capturing derogation. The use of latest technology (GIS, GPS, portable tablet PCs, electronic game reporting system) has resulted in a greater efficiency of the overall supervision process. This was aided further by increase in the penalties for offences, the introduction of swift

administrative fines system for minor violations in lieu of prosecution, greater regulatory rigour, and greater efforts at promoting education and regulatory awareness.

11.5 The above efforts paid off in terms of a sustained reduction in the incidence of serious trapping-related violations that were prevalent in the past years, and a slight increase in the disclosure of minor offences which, as a result of increase in enforcement, are becoming increasingly harder to go by undetected.