Report on the outcome of the autumn 2015 finch live-capturing season in Malta

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Wild Birds Regulation Unit

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 2015. 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 (Linnet *Carduelis cannabina*, Goldfinch *Carduelis carduelis*, Greenfinch *Carduelis chloris*, Siskin *Carduelis spinus*, Hawfinch *Coccothraustes coccothraustes*, Chaffinch *Fringilla coelebs* and 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 2015

GENERAL BACKGROUND

2.1 Traditional live-capturing (alternatively referred to as 'trapping') of seven species of finches, namely Chaffinch (*Fringilla coelebs*), Linnet (*Carduelis cannabina*), Goldfinch (*Carduelis carduelis*), Greenfinch (*Carduelis chloris*), Hawfinch (*Coccothraustes coccothraustes*), Serin (*Serinus serinus*), and Siskin (*Carduelis 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.

[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

2.10 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 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:

[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
[4] ibid

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".

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

[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
[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

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 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.

[10] Emphasis added.
[11] EU:C:2006:378
[12] EU:C:2009:535.
[13] EU:C:2007:427, paragraph 197

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 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

[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.
[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

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 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 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].

[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 504.124
[22] Regulation 7(g) of subsidiary legislation 504.124
[23] Regulation 7(o) of subsidiary legislation 504.124
[24] Regulation 27(2) of the Conservation of Wild Birds Regulations (SL 504.71)

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. 504.124, 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. 504.71) is the main legal instrument which transposes the Birds Directive. The following provisions of these Regulations are of particular relevance:

- 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.

- Conservation of Wild Birds (Framework for Allowing a Derogation Opening an Autumn Live-Capturing Season for Finches)

Regulations, 2014 (S.L. 504.124[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 clapnets);
- 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);
- 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);

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

- Requirement to immediately ring with a single-use ring provided by the Unit, and report birds caught through telephonic game reporting system and in Carnet de Chasse;

- 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, Carnet de Chasse, 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. 504.71).

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. 504.71). 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 2015 Autumn live-capturing season for Finches) Regulations, 2015 (Legal Notice 330 of 2015[26]) declared the opening of the 2015 live-capturing

[26] S.L. 504.131 available at http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12424&l=1

season for finches from 20 October to 31 December 2015, inclusive of both days.

3. Discussion within Malta Ornis Committee leading up to application of derogation in 2015

3.1 Deliberations of the Malta Ornis Committee in 2014 in relation to finch live-capturing derogation were summarised in Malta's report on the application of derogation in 2014 and will not be re-stated here.

3.2 In 2015, the Malta Ornis Committee discussed the proposed derogation during two sessions on 22 and 27 May 2015 respectively. During these sessions, the Committee discussed the outcome of the 2014 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 2015, subject to the same parameters as in 2014. The recommendation was adopted following five votes in favour, one against and one abstention.

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 2015 in order to ascertain that the conservation status of finch species would not be threatened by the application of a limited Autumn 2015 live-capturing season. This assessment was presented to the Malta Ornis Committee in May 2015[27].

4.2 The assessment was based on the previous review of the conservation status of seven finch species undertaken in April 2014, which was further updated with the latest available scientific data. The 2015 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 2014. 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, 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 and Hawfinch is stable at all levels of the population (minimum and maximum pairs and their geomean), whereas the minimum number of Greenfinch pairs is increasing, and

[27] The assessment is enclosed as Annex I to this report.

is stable at the maximum and geomean levels. On the other hand, the short-term trend for Goldfinch, Serin and Siskin showed a decline. 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 and geomean.

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 increased, the Linnet, Hawfinch and Serin were stable but the Chaffinch, Greenfinch and Siskin decreased.

4.5 The long-term trends at ring recovery level were found to be consistent with those at EU level. The Chaffinch, Linnet, Greenfinch, Hawfinch and Serin were stable at all three levels of the population (min/max/geomean), but the Siskin increased at all three levels and the Goldfinch increased in the minimum number of breeding pairs and the geomean. The table 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 (2014) at pan-European as well as at EU level with those reported by Member States in their Article 12 reports.

Table 1 – Population trends amongst 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	↓	↓	↓	↑	→	↑	↓	↓	↓	↑	↑	↑

Finches population trends								
	Short-term Trend				Long-term Trend			
Species	EBCC 2014 (pan-European)	EBCC 2014 (EU)	Article 12 (2008–2012) [EU Geomean]	Article 12 (2008–2012) [Ring Recoveries Geomean]	EBCC 2014 (pan-European)	EBCC 2014 (EU)	Article 12 (2008–2012) [EU Geomean]	Article 12 (2008–2012) [Ring Recoveries Geomean]
Chaffinch	↑	?	→	↓	↑	↑	→	→
Linnet	→	?	→	→	↓	↓	→	→
Goldfinch	↑	?	↓	↑	↑	↑	→	↑
Greenfinch	→	?	→	↓	→	→	→	→
Hawfinch	↑	?	→	→	↑	↑	→	→
Serin	↓	?	↓	→	↓	↓	→	→
Siskin	↑	?	↓	↓	↓	→	↑	↑

Source: Wild Birds Regulation Unit, 2015

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,

in the event of an application of a derogation for finch live-capturing in Autumn 2015 are proposed to be retained as established in the Framework Regulations (S.L. 504.124)[28]. 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	1,409,800	14,098	7,049	3,186	2,350	33.33%
Siskin	2,348,270	23,483	7,749	3,185	2,350	30.33%
Total			153,103		27,500	17.96%

** 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).*

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.

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

5. ISSUANCE OF AUTUMN 2015 FINCH LIVE-CAPTURING LICENCES

5.1 Applications for a special finch live-capturing licence were received during a 19-day period between 13 July and 31 July 2015. Only those applicants who were at the time of application already in possession of a valid general live-capturing licence for 2015 (carnet de chasse) 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 trapping *carnet de chasse* booklet for 2015 (general live-capturing licence) duly stamped by a recognised hunting organisation, 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 in 2015 and therefore no further examinations for this category of licence were conducted during the year.

5.5 A total of 3,880 persons submitted applications for special finch live-capturing licence (2,862 in Malta and 1,018 in Gozo). Of these, 799 persons (668 in Malta and 131 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 3 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 14 October

2015 was 3,877, of which 2,859 licences were issued to applicants resident in Malta and 1,018 to applicants resident in Gozo.

5.7 Consequently the total number of special finch live-capturing licences in 2015 was 7% less than the number of special licences issued in 2014 (4,171).

5.8 The Autumn 2015 live-capturing licence (vide Annex II) set a number of conditions for the 2015 live-capturing season, as provided in the Framework Regulations (S.L. 504.124) and the Notice of Derogation (Legal Notice 330 of 2015). 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 report a catch by dialling the number indicated on the 2015 special licence, followed by the placing of the species-specific single-use ring (white, green or metal depending on the species) on the tarsus of the finch. Moreover, before leaving the live-capturing site, the licensees were required to record the date, location and the amount of finches caught in the *carnet de chasse*. In the event that no finches were caught the licensee was required to specify '0' or 'X'.

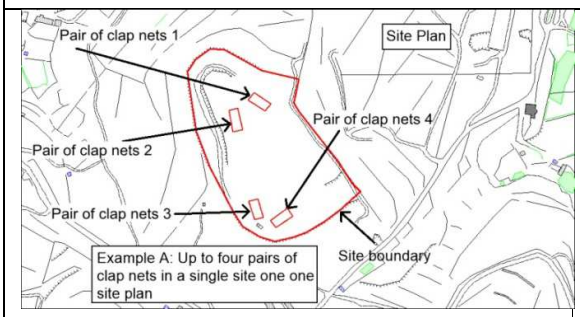
5.9 At any one time a licensed person could only make use of a maximum of twenty-one (21) specimens from the relevant species, including their hybrids, as live-decoys, with a ceiling of not more than seven live-decoys for any one species. All live-decoys, including hybrids, had to be fitted with a seamless closed ring, signifying that the bird is captive-bred or legally purchased. 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. 504.71).

5.10 Licensees were expected to immediately report their catches in real time by calling the number specified in their Special Licence and through their *carnet de chasse* before leaving the live-capturing site. 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 2015 special licence for live-capturing and the *carnet de chasse* (February 2015–January 2016) at all times, together with the relevant registered site plans as approved by the Wild Birds Regulation Unit.

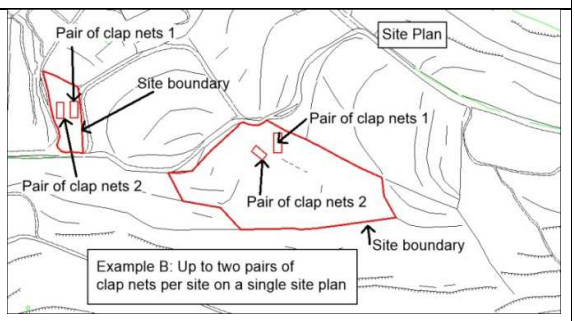
5.11 The registration and screening procedure for site plans, which ensured compliance with the rigorous criteria established in legislation, was described in detail in Malta's report on the outcome of the 2014 finch live-capturing derogation and will not be re-stated in this report.

5.12 Licensees were thus 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).

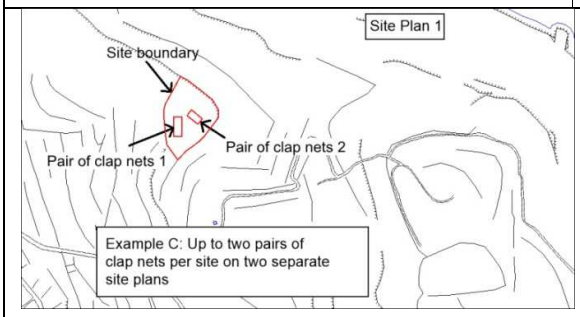
Figure 1: Live-capturing stations

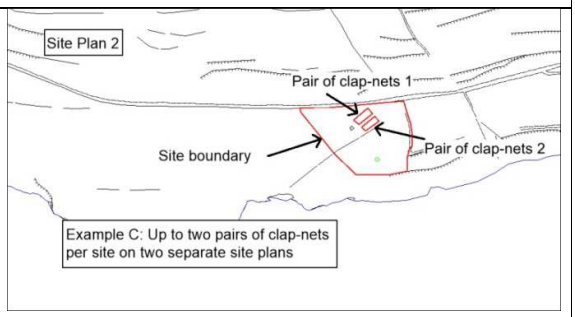


Example 'A': Two live-capturing stations within same site (and site plan)



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 6,246 registered live-capturing stations (10,710 clap-net pairs) pertaining to 3,877 special licensees were authorized as part of the special licences to be active during the 2015 derogation, an overall decrease when compared with the 2014 finch live-capturing season (n_{2014}=6,438 registered live-capturing stations [11,370 clap-net pairs], submitted by 4,171 licensees). In 2015, a total of 4,448 registered live-capturing stations were located in Malta and 1,798 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. 76.76% (n=8,221) were intended exclusively for finch live-capturing whereas 23.24% (n=2,489) 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 2015			
	Stations*	Clap-net pairs*	Licensees*
Malta	4,448	7,706	2,859
Gozo	1,798	3,004	1,018
Total	**6,246**	**10,710**	**3,877**
* 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, 2015

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. Registration for a total of 234 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. 504.124) or because the licensee had exceeded the permitted limit of two stations/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 "15RU" on each ring. The finch rings were colour-coded according to the species (and size), as shown below.

Table 4 – Special single use rings

Ring colour	Species	Quantities supplied to licensees
White	Linnet, Chaffinch, Serin, Siskin and Goldfinch	28,076
Green	Greenfinch	6,188
Metal	Hawfinch	4,332
Total		38,596

Source: Wild Birds Regulation Unit, 2015

Source: Wild Birds Regulation Unit, 2015

6.2 The limit imposed on single-use rings corresponded with the maximum individual seasonal bag limit of ten finches. The distribution of finch rings per species is shown in the figure below. Finch live-capturers applied for a total of 38,596 rings. White rings comprised 72.74% of this total, followed by green rings (16.03%) and metal (11.22%).

6.3 Following closure of the 2015 finch live-capturing season, licensed live-capturers were legally required to return all unused finch rings together with their 2015–2016 live-capturing general licence between the 18 January and 13 February 2016. By this deadline, 3,877 finch live-capturers returned a total of 27,254 finch rings. The remaining balance of 763 unreturned rings, as shown in the table below, was subject to a €5 fine per ring.

Table 5 – returns of unused single use rings

Number of finch rings distributed	38,596
Number of finches caught	10,579
Number of finch rings returned	27,254
Balance subject to €5 fine per ring not returned	763

Source: Wild Birds Regulation Unit, 2016

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, licensed live-capturers were obliged to immediately report their catch by calling on number 77070006, as specified in the special licence. This immediate real-time reporting requirement applied in addition to the requirement to also report the birds caught in Carnet de Chasse, prior to leaving the live-capturing site.

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 relevant data is presented below.

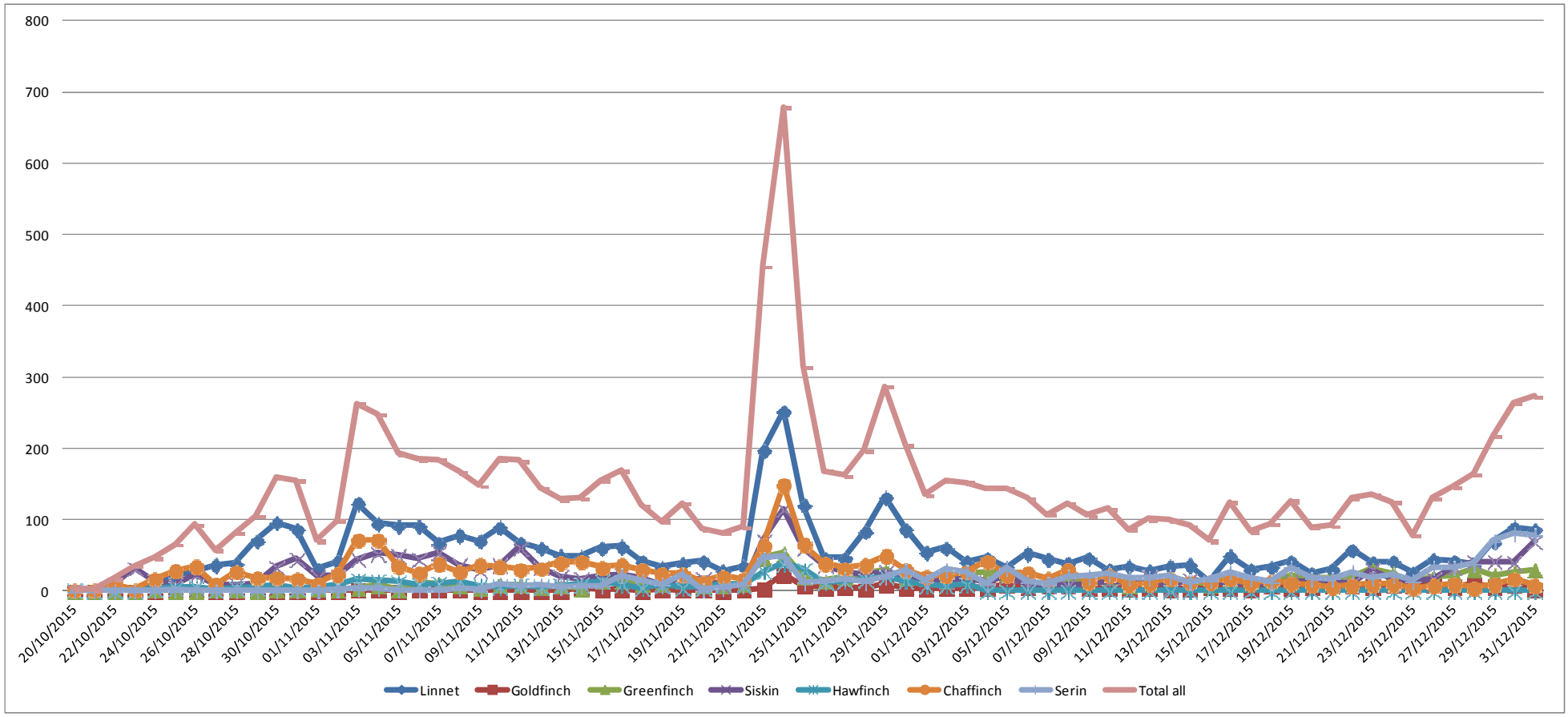
Table 6 – Finches caught as reported through the telephone system

Date	Linnet	Goldfinch	Greenfinch	Siskin	Hawfinch	Chaffinch	Serin
20/10/2015	0	0	0	1	1	1	0
21/10/2015	1	0	0	0	0	1	0
22/10/2015	0	0	0	9	0	9	0
23/10/2015	1	0	0	32	0	2	0
24/10/2015	12	0	1	14	3	17	0
25/10/2015	21	0	0	9	5	28	2
26/10/2015	28	0	0	23	6	35	1
27/10/2015	36	0	2	8	2	9	0
28/10/2015	39	0	2	9	4	27	0
29/10/2015	71	0	0	10	5	19	0
30/10/2015	96	0	2	34	8	19	0
31/10/2015	87	0	2	45	4	17	0
01/11/2015	31	0	3	21	6	10	0
02/11/2015	41	0	2	21	9	24	2
03/11/2015	123	1	4	44	16	72	3
04/11/2015	95	1	8	53	15	72	4
05/11/2015	92	0	2	50	13	35	1
06/11/2015	92	1	12	45	9	25	1
07/11/2015	68	1	11	54	11	38	1
08/11/2015	78	1	7	36	14	27	4
09/11/2015	70	0	4	29	7	36	2
10/11/2015	89	0	9	36	6	35	10
11/11/2015	68	0	9	61	7	31	7
12/11/2015	60	0	6	33	6	32	8
13/11/2015	49	0	7	20	7	40	6
14/11/2015	48	4	3	17	10	41	7
15/11/2015	61	2	15	22	14	34	7
16/11/2015	63	2	14	23	9	36	22
17/11/2015	42	0	11	19	4	30	15
18/11/2015	34	2	11	9	8	24	9
19/11/2015	39	1	15	16	5	24	23
20/11/2015	42	1	7	17	5	13	2
21/11/2015	28	0	8	8	11	21	5
22/11/2015	35	1	11	9	8	17	9
23/11/2015	197	3	47	71	27	64	47
24/11/2015	252	23	53	115	39	149	48
25/11/2015	120	7	20	60	31	65	12
26/11/2015	47	5	15	36	12	39	14
27/11/2015	47	6	20	26	14	32	17
28/11/2015	83	3	24	23	16	36	13
29/11/2015	132	10	29	27	20	49	20
30/11/2015	87	4	19	22	14	30	29
01/12/2015	54	3	18	17	8	20	15

Date	Linnet	Goldfinch	Greenfinch	Siskin	Hawfinch	Chaffinch	Serin
02/12/2015	61	4	15	14	7	23	31
03/12/2015	41	4	25	18	10	27	27
04/12/2015	47	5	27	12	0	42	11
05/12/2015	33	9	26	21	0	23	32
06/12/2015	53	6	24	8	0	26	13
07/12/2015	45	7	19	8	0	17	11
08/12/2015	38	7	20	8	0	30	20
09/12/2015	47	4	12	9	0	13	21
10/12/2015	30	4	20	14	0	23	25
11/12/2015	35	3	8	12	0	9	19
12/12/2015	28	5	18	20	0	11	19
13/12/2015	35	2	19	5	0	18	21
14/12/2015	36	3	12	16	0	13	12
15/12/2015	14	6	10	12	0	13	16
16/12/2015	49	4	16	12	0	17	27
17/12/2015	30	2	12	11	0	11	18
18/12/2015	34	8	14	10	0	15	13
19/12/2015	42	5	21	14	0	11	33
20/12/2015	24	6	18	14	0	9	18
21/12/2015	31	7	18	13	0	6	17
22/12/2015	58	7	20	10	0	8	27
23/12/2015	40	6	31	30	0	10	19
24/12/2015	41	10	25	16	0	10	23
25/12/2015	26	7	12	14	0	4	15
26/12/2015	44	9	20	17	0	7	33
27/12/2015	42	6	22	33	0	10	33
28/12/2015	38	10	31	41	0	5	39
29/12/2015	69	6	22	41	0	9	71
30/12/2015	89	10	27	40	0	17	81
31/12/2015	86	2	30	69	0	8	78
Total	**4045**	**256**	**1027**	**1796**	**436**	**1830**	**1189**

Source: Wild Birds Regulation Unit, 2016

Figure 2 – Distribution of catches during the season



Source: Wild Birds Regulation Unit, 2016

7.6 The overall seasonal bag limit for Hawfinch was reached on 3 December 2015. A Government Notice was issued on that same day declaring that the Autumn 2015 finch live-capturing licences had lapsed and were considered revoked only in respect of the live-capturing of the Hawfinch and that they remained unaffected with regard to the other species. An SMS was sent out simultaneously to all licensees to inform them regarding closure of the season for Hawfinch.

7.7 Over the period of the derogation, an individual seasonal bag limit of ten birds was reached by 200 licensees, whilst 2,474 licensees (64% of all licensees) reported a catch ranging from one bird to the maximum bag limit of ten, as shown below.

Table 7 – Comparative analysis of reported catches

Finches caught	Number of live-capturers declaring catch	Total finches reported caught
0	1405	0
1	418	418
2	496	992
3	348	1044
4	258	1032
5	205	1025
6	167	1002
7	118	826
8	136	1088
9	128	1152
10	200	2000
Total caught		10579

Source: Wild Birds Regulation Unit, 2016

8. FINCH MIGRATION STUDY

8.1 An independent scientific study was carried out between 20 October and 31 December 2015, 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 7 finch species during the Autumn/Winter 2015 migration period.

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

- Daily datasheets with raw counts for each of the 7 finch species; and
- A monitoring report for Autumn/Winter 2015 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 7 finch species;
    - A daily estimate of the influx of each of the 7 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 comparative analysis of the results obtained with the bag data extracted from the 2015 telephonic game reporting system.

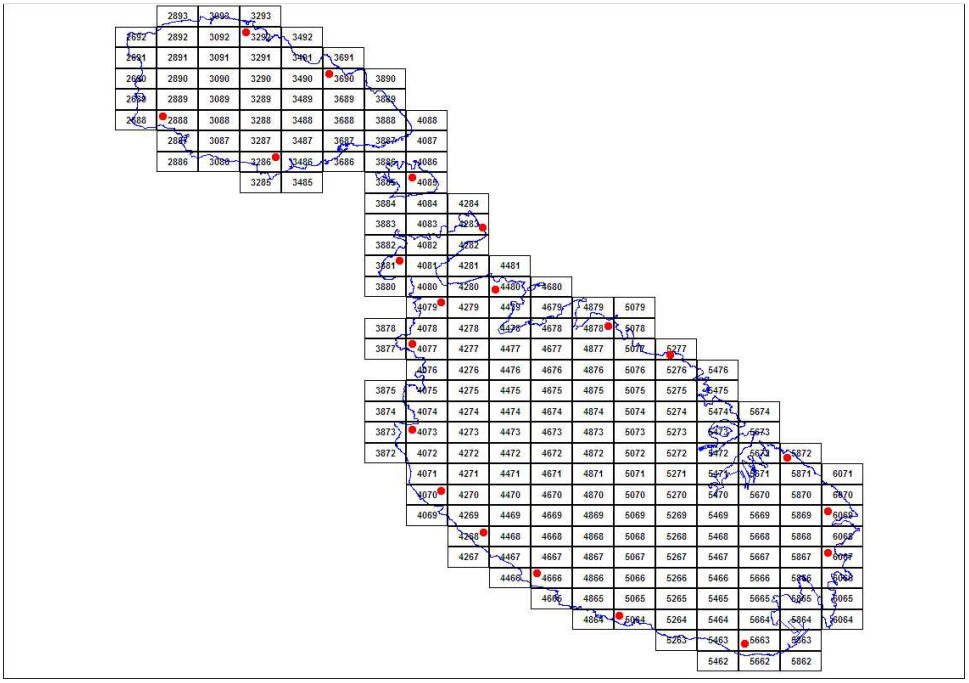
8.3 The geographical scope of the study extended across the three inhabited islands of the Maltese archipelago (Malta, Gozo and Comino), with data gathered during an 11-week period from 20 October until 31 December 2015. Given that the study was mainly intended to quantify the influx of migrating finches, 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 6 different sites on each day during the monitoring period.

8.5 Each group of 6 sites was surveyed once every 4 days, such that a total of 21 sites were surveyed in total over each period of 4 days. The study site at Comino was included in the 6 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 Armier or Qala, Gozo) 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 3 below.

Figure 3 – Location of monitoring sites



Source: Ecoserv, 2016

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 10:00 and 15:00 during the first six 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 2015). 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 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)[29]; 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 23, while the mean daily counts ranged between 0 and 3.8. During the present (2015) autumn migration, relatively high counts for this species were recorded on some days between 26 October and 10 November 2015. 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 site at grid location 4268 and only a single individual was recorded throughout the survey period from each of the sites at grid locations 4077, 6069, 5872 and 5663, while at the higher end, 72 Linnet individuals were recorded from the site at grid location 4085, followed by 28 individuals recorded from the sites at grid locations 3292 and 3268. Counts of Linnet recorded from the present survey, along with those made during the autumn 2014 survey, are shown graphically in Figure 4.

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-15	0.33	0.82	2	181
21-Oct-15	0.00	0.00	0	0
22-Oct-15	0.33	0.82	2	181
23-Oct-15	0.00	0.00	0	0
24-Oct-15	1.33	1.63	8	723
25-Oct-15	3.00	3.69	18	1627
26-Oct-15	1.67	3.61	10	904
27-Oct-15	1.83	1.83	11	994
28-Oct-15	0.83	1.60	5	452
29-Oct-15	2.33	3.39	14	1266
30-Oct-15	2.17	1.83	13	1175
31-Oct-15	1.83	2.56	11	994
1-Nov-15	2.00	3.16	12	1085
2-Nov-15	1.83	2.40	11	994
3-Nov-15	3.83	4.49	23	2079
4-Nov-15	1.67	2.07	10	904

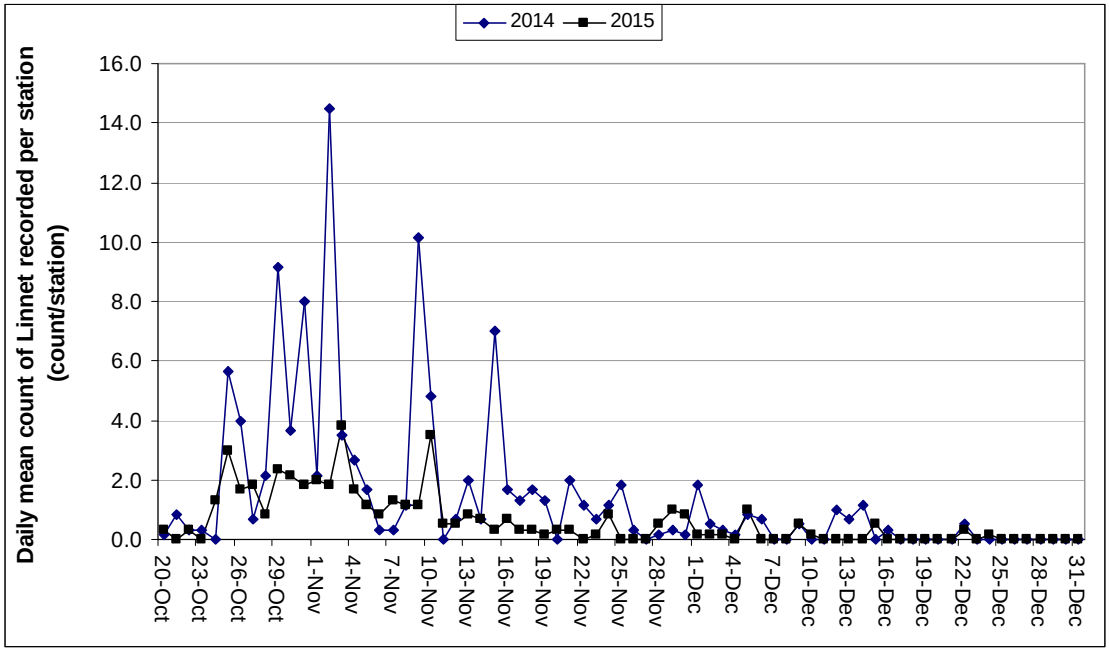
[29] Note, however, that this estimate includes the perimeter of minor islets and rocks.

Date	Mean Count ± SD		Total count	Estimated Daily Influx
5-Nov-15	1.17	1.60	7	633
6-Nov-15	0.83	1.33	5	452
7-Nov-15	1.33	2.34	8	723
8-Nov-15	1.17	1.33	7	633
9-Nov-15	1.17	2.04	7	633
10-Nov-15	3.50	5.72	21	1899
11-Nov-15	0.50	1.22	3	271
12-Nov-15	0.50	0.84	3	271
13-Nov-15	0.83	1.33	5	452
14-Nov-15	0.67	1.03	4	362
15-Nov-15	0.33	0.82	2	181
16-Nov-15	0.67	1.03	4	362
17-Nov-15	0.33	0.82	2	181
18-Nov-15	0.33	0.82	2	181
19-Nov-15	0.17	0.41	1	90
20-Nov-15	0.33	0.82	2	181
21-Nov-15	0.33	0.82	2	181
22-Nov-15	0.00	0.00	0	0
23-Nov-15	0.17	0.41	1	90
24-Nov-15	0.83	1.33	5	452
25-Nov-15	0.00	0.00	0	0
26-Nov-15	0.00	0.00	0	0
27-Nov-15	0.00	0.00	0	0
28-Nov-15	0.50	1.22	3	271
29-Nov-15	1.00	1.26	6	542
30-Nov-15	0.83	2.04	5	452
1-Dec-15	0.17	0.41	1	90
2-Dec-15	0.17	0.41	1	90
3-Dec-15	0.17	0.41	1	90
4-Dec-15	0.00	0.00	0	0
5-Dec-15	1.00	1.55	6	542
6-Dec-15	0.00	0.00	0	0
7-Dec-15	0.00	0.00	0	0
8-Dec-15	0.00	0.00	0	0
9-Dec-15	0.50	1.22	3	271
10-Dec-15	0.17	0.41	1	90
11-Dec-15	0.00	0.00	0	0
12-Dec-15	0.00	0.00	0	0
13-Dec-15	0.00	0.00	0	0
14-Dec-15	0.00	0.00	0	0
15-Dec-15	0.50	1.22	3	271
16-Dec-15	0.00	0.00	0	0
17-Dec-15	0.00	0.00	0	0
18-Dec-15	0.00	0.00	0	0
19-Dec-15	0.00	0.00	0	0
20-Dec-15	0.00	0.00	0	0
21-Dec-15	0.00	0.00	0	0
22-Dec-15	0.33	0.82	2	181
23-Dec-15	0.00	0.00	0	0
24-Dec-15	0.17	0.41	1	90
25-Dec-15	0.00	0.00	0	0
26-Dec-15	0.00	0.00	0	0
27-Dec-15	0.00	0.00	0	0

Date	Mean Count ± SD		Total count	Estimated Daily Influx
28-Dec-15	0.00	0.00	0	0
29-Dec-15	0.00	0.00	0	0
30-Dec-15	0.00	0.00	0	0
31-Dec-15	0.00	0.00	0	0
			Estimated Total Influx	24,771

Source: Ecoserv, 2016

Figure 4 – Daily count of Linnet recorded in 2014 and 2015 monitoring studies



Source: Ecoserv, 2016

8.15 Raw daily counts for **Chaffinch** 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 9). Relatively high counts for this species were recorded on some days towards the end of October and beginning of November (25 October, 3 and 7 November), while a relatively high count was also recorded on 30 November 2015. 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 4077, 4073 and 4283, while at the higher end, 30 Chaffinch individuals were recorded from the site at grid location 2888.

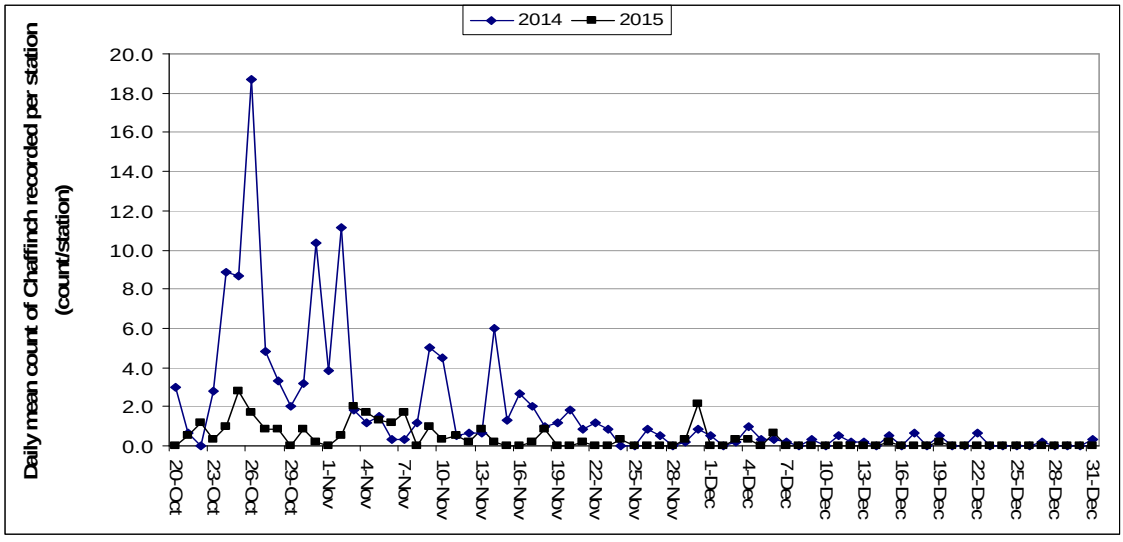
Table 9 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Chaffinch

Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-15	0.00	0.00	0	0
21-Oct-15	0.50	1.22	3	271
22-Oct-15	1.17	2.04	7	633
23-Oct-15	0.33	0.82	2	181
24-Oct-15	1.00	1.67	6	542
25-Oct-15	2.83	5.98	17	1537
26-Oct-15	1.67	3.20	10	904
27-Oct-15	0.83	1.17	5	452
28-Oct-15	0.83	2.04	5	452
29-Oct-15	0.00	0.00	0	0
30-Oct-15	0.83	2.04	5	452
31-Oct-15	0.17	0.41	1	90
1-Nov-15	0.00	0.00	0	0
2-Nov-15	0.50	0.84	3	271
3-Nov-15	2.00	4.43	12	1085
4-Nov-15	1.67	2.73	10	904
5-Nov-15	1.33	1.03	8	723
6-Nov-15	1.17	2.04	7	633
7-Nov-15	1.67	2.34	10	904
8-Nov-15	0.00	0.00	0	0
9-Nov-15	1.00	1.26	6	542
10-Nov-15	0.33	0.82	2	181
11-Nov-15	0.50	1.22	3	271
12-Nov-15	0.17	0.41	1	90
13-Nov-15	0.83	1.33	5	452
14-Nov-15	0.17	0.41	1	90
15-Nov-15	0.00	0.00	0	0
16-Nov-15	0.00	0.00	0	0
17-Nov-15	0.17	0.41	1	90
18-Nov-15	0.83	0.98	5	452
19-Nov-15	0.00	0.00	0	0
20-Nov-15	0.00	0.00	0	0
21-Nov-15	0.17	0.41	1	90
22-Nov-15	0.00	0.00	0	0
23-Nov-15	0.00	0.00	0	0
24-Nov-15	0.33	0.52	2	181
25-Nov-15	0.00	0.00	0	0
26-Nov-15	0.00	0.00	0	0
27-Nov-15	0.00	0.00	0	0
28-Nov-15	0.00	0.00	0	0
29-Nov-15	0.33	0.82	2	181
30-Nov-15	2.17	4.02	13	1175
1-Dec-15	0.00	0.00	0	0
2-Dec-15	0.00	0.00	0	0
3-Dec-15	0.33	0.82	2	181
4-Dec-15	0.33	0.82	2	181
5-Dec-15	0.00	0.00	0	0

Date	Mean Count ± SD		Total count	Estimated Daily Influx
6-Dec-15	0.67	1.21	4	362
7-Dec-15	0.00	0.00	0	0
8-Dec-15	0.00	0.00	0	0
9-Dec-15	0.00	0.00	0	0
10-Dec-15	0.00	0.00	0	0
11-Dec-15	0.00	0.00	0	0
12-Dec-15	0.00	0.00	0	0
13-Dec-15	0.00	0.00	0	0
14-Dec-15	0.00	0.00	0	0
15-Dec-15	0.17	0.41	1	90
16-Dec-15	0.00	0.00	0	0
17-Dec-15	0.00	0.00	0	0
18-Dec-15	0.00	0.00	0	0
19-Dec-15	0.17	0.41	1	90
20-Dec-15	0.00	0.00	0	0
21-Dec-15	0.00	0.00	0	0
22-Dec-15	0.00	0.00	0	0
23-Dec-15	0.00	0.00	0	0
24-Dec-15	0.00	0.00	0	0
25-Dec-15	0.00	0.00	0	0
26-Dec-15	0.00	0.00	0	0
27-Dec-15	0.00	0.00	0	0
28-Dec-15	0.00	0.00	0	0
29-Dec-15	0.00	0.00	0	0
30-Dec-15	0.00	0.00	0	0
31-Dec-15	0.00	0.00	0	0
			Estimated Total Influx	14,763

Source: Ecoserv, 2016

Figure 5 – Daily count of Chaffinch recorded in 2014 and 2015 monitoring studies



Source: Ecoserv, 2016

8.16 Raw daily counts for Greenfinch recorded from the 21 sites during the present study varied between 0 and a maximum of 3, while the mean daily counts ranged between 0 and 0.5. Counts for this species were therefore very low overall. Throughout the survey period, a total of 3 individuals were recorded from the site at grid location 5277, while a single individual was recorded from each of the sites at grid locations 4079, 6067, 4666, 4480, 3268, 4073 and 3690; no individuals were recorded throughout the survey period from any of the other sites.

8.17 Values of mean daily counts and total counts of Greenfinch recorded during the period 20 October to 31 December 2015 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 survey, are shown graphically in Figure 6. Overall, count values for Greenfinch from the present (autumn 2015) survey are appreciably lower than those recorded from the previous autumn 2014 survey. For both 2014 and 2015, higher count values were recorded during November and the first 20 days of December. However, higher counts for this species were also recorded in late October 2014 compared to 'zero' counts made during the same period in 2015 (present survey; see Figure 6).

8.18 The estimated total influx of Greenfinch over the Maltese Islands is given in table below. Based on the mean daily counts, extrapolation translates to an estimated daily influx ranging between 0 and 271 individuals, with a total influx over the survey period (20 October – 31 December; that is 73 days) of 904 individuals, that is, around 12 birds per day.

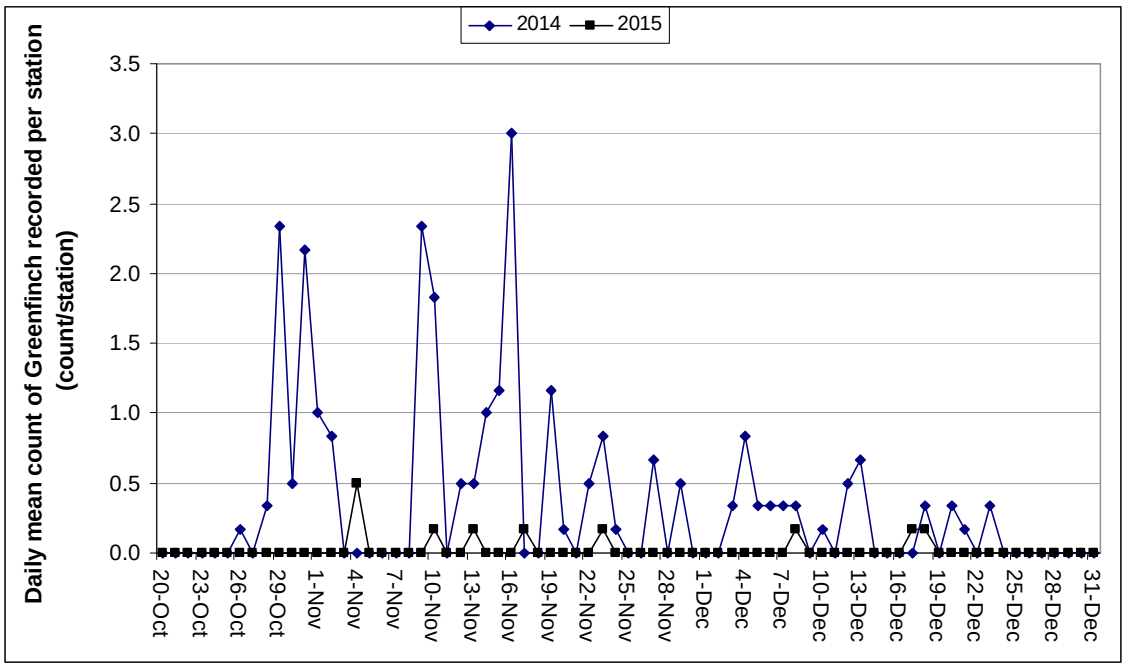
Table 10 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Greenfinch

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

Date	Mean Count ± SD		Total count	Estimated Daily Influx
8-Dec-15	0.17	0.41	1	90
9-Dec-15	0.00	0.00	0	0
10-Dec-15	0.00	0.00	0	0
11-Dec-15	0.00	0.00	0	0
12-Dec-15	0.00	0.00	0	0
13-Dec-15	0.00	0.00	0	0
14-Dec-15	0.00	0.00	0	0
15-Dec-15	0.00	0.00	0	0
16-Dec-15	0.00	0.00	0	0
17-Dec-15	0.17	0.41	1	90
18-Dec-15	0.17	0.41	1	90
19-Dec-15	0.00	0.00	0	0
20-Dec-15	0.00	0.00	0	0
21-Dec-15	0.00	0.00	0	0
22-Dec-15	0.00	0.00	0	0
23-Dec-15	0.00	0.00	0	0
24-Dec-15	0.00	0.00	0	0
25-Dec-15	0.00	0.00	0	0
26-Dec-15	0.00	0.00	0	0
27-Dec-15	0.00	0.00	0	0
28-Dec-15	0.00	0.00	0	0
29-Dec-15	0.00	0.00	0	0
30-Dec-15	0.00	0.00	0	0
31-Dec-15	0.00	0.00	0	0
			Estimated Total Influx	904

Source: Ecoserv, 2016

Figure 6 – Daily count of Greenfinch recorded in 2014 and 2015 monitoring studies



Source: Ecoserv, 2016

8.19 Raw daily counts for Siskin recorded from the 21 sites during the present study varied between 0 and a maximum of 15, while the mean daily counts ranged between 0 and 2.5 (Table 11). Relatively high counts for this species were recorded on 10 and 17 November 2014, when a total of 15 Siskin individuals were observed. The total counts, i.e. the total number of Siskin, 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 the sites at grid locations 6069 and 5064, while at the higher end, 51 Siskin individuals were recorded from the site at grid location 4085.

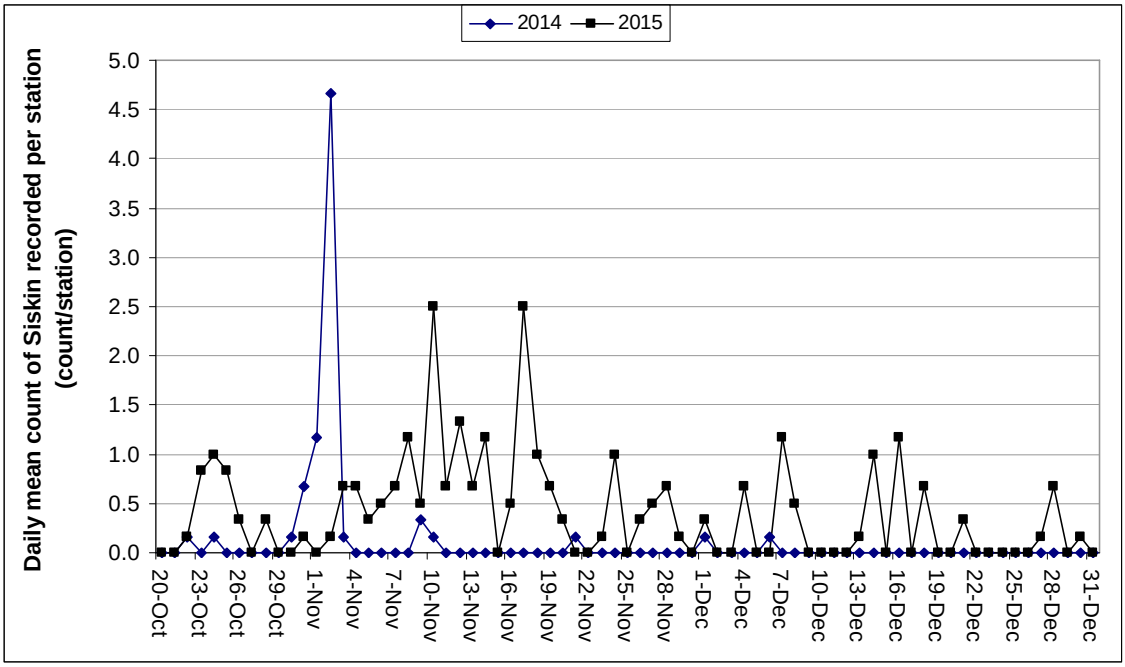
Table 11 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Siskin

Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-15	0.00	0.00	0	0
21-Oct-15	0.00	0.00	0	0
22-Oct-15	0.17	0.41	1	90
23-Oct-15	0.83	1.17	5	452
24-Oct-15	1.00	1.26	6	542
25-Oct-15	0.83	1.60	5	452
26-Oct-15	0.33	0.52	2	181
27-Oct-15	0.00	0.00	0	0
28-Oct-15	0.33	0.82	2	181
29-Oct-15	0.00	0.00	0	0
30-Oct-15	0.00	0.00	0	0
31-Oct-15	0.17	0.41	1	90
1-Nov-15	0.00	0.00	0	0
2-Nov-15	0.17	0.41	1	90
3-Nov-15	0.67	1.21	4	362
4-Nov-15	0.67	1.21	4	362
5-Nov-15	0.33	0.52	2	181
6-Nov-15	0.50	0.84	3	271
7-Nov-15	0.67	1.21	4	362
8-Nov-15	1.17	1.60	7	633
9-Nov-15	0.50	0.84	3	271
10-Nov-15	2.50	2.59	15	1356
11-Nov-15	0.67	0.82	4	362
12-Nov-15	1.33	2.42	8	723
13-Nov-15	0.67	1.21	4	362
14-Nov-15	1.17	0.98	7	633
15-Nov-15	0.00	0.00	0	0
16-Nov-15	0.50	1.22	3	271
17-Nov-15	2.50	2.95	15	1356
18-Nov-15	1.00	2.00	6	542
19-Nov-15	0.67	1.21	4	362
20-Nov-15	0.33	0.82	2	181
21-Nov-15	0.00	0.00	0	0
22-Nov-15	0.00	0.00	0	0
23-Nov-15	0.17	0.41	1	90
24-Nov-15	1.00	1.67	6	542
25-Nov-15	0.00	0.00	0	0
26-Nov-15	0.33	0.82	2	181
27-Nov-15	0.50	1.22	3	271
28-Nov-15	0.67	0.82	4	362
29-Nov-15	0.17	0.41	1	90
30-Nov-15	0.00	0.00	0	0
1-Dec-15	0.33	0.82	2	181
2-Dec-15	0.00	0.00	0	0
3-Dec-15	0.00	0.00	0	0
4-Dec-15	0.67	1.03	4	362
5-Dec-15	0.00	0.00	0	0
6-Dec-15	0.00	0.00	0	0
7-Dec-15	1.17	1.83	7	633

Date	Mean Count ± SD		Total count	Estimated Daily Influx
8-Dec-15	0.50	1.22	3	271
9-Dec-15	0.00	0.00	0	0
10-Dec-15	0.00	0.00	0	0
11-Dec-15	0.00	0.00	0	0
12-Dec-15	0.00	0.00	0	0
13-Dec-15	0.17	0.41	1	90
14-Dec-15	1.00	1.26	6	542
15-Dec-15	0.00	0.00	0	0
16-Dec-15	1.17	2.86	7	633
17-Dec-15	0.00	0.00	0	0
18-Dec-15	0.67	1.03	4	362
19-Dec-15	0.00	0.00	0	0
20-Dec-15	0.00	0.00	0	0
21-Dec-15	0.33	0.82	2	181
22-Dec-15	0.00	0.00	0	0
23-Dec-15	0.00	0.00	0	0
24-Dec-15	0.00	0.00	0	0
25-Dec-15	0.00	0.00	0	0
26-Dec-15	0.00	0.00	0	0
27-Dec-15	0.17	0.41	1	90
28-Dec-15	0.67	1.63	4	362
29-Dec-15	0.00	0.00	0	0
30-Dec-15	0.17	0.41	1	90
31-Dec-15	0.00	0.00	0	0
			Estimated Total Influx	16,002

Source: Ecoserv, 2016

Figure 7 – Daily count of Siskin recorded in 2014 and 2015 monitoring studies



Source: Ecoserv, 2016

8.20 Raw daily counts for Goldfinch 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 12). Counts for this species were therefore very low overall: a single Goldfinch individual was recorded from the site at grid location 4085, while no individuals were recorded throughout the survey period from any of the other sites.

8.21 Such a result must be interpreted with utmost caution, since a mean count value of '0' recorded for a bird species on particular days during the survey period, which 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.

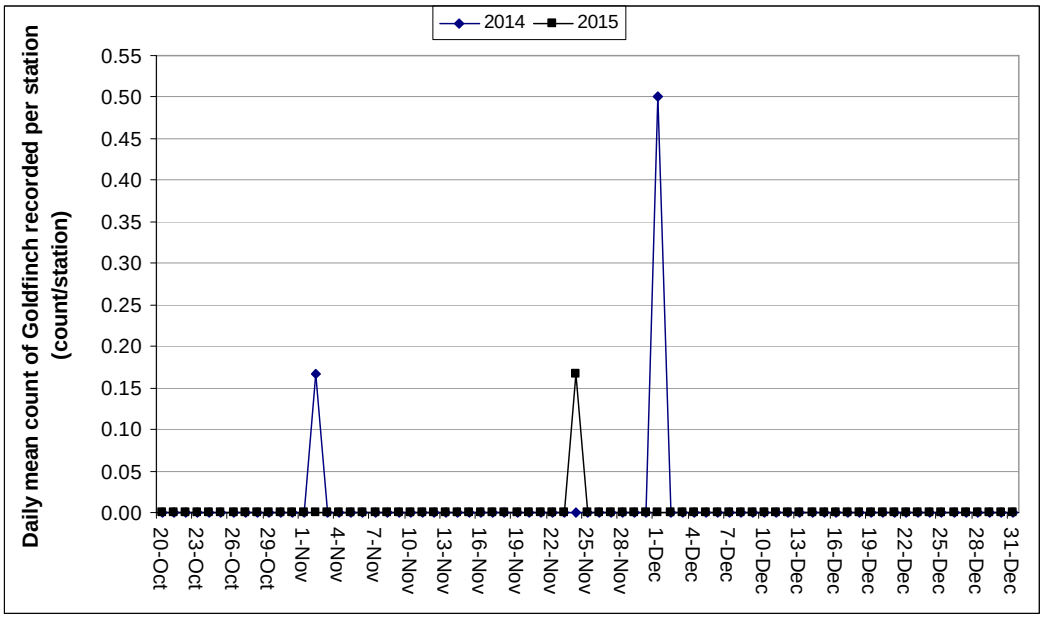
Table 12 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Goldfinch

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

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

Source: Ecoserv, 2016

Figure 8 – Daily count of Goldfinch recorded in 2014 and 2015 monitoring studies



Source: Ecoserv, 2016

8.22 Raw daily counts for Serin recorded from the 21 sites during the present study varied between 0 and a maximum of 13, while the mean daily counts ranged between 0 and 2.17 (Table 13). Relatively high counts for this species was recorded on 16 November 2015. 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 4268, 4077, 4666, 6069, 4073, 5872 and 4070, while at the higher end, 29 and 22 Serin individuals were recorded from the sites at grid locations 4085 and 3292 respectively.

8.23 Values of mean daily counts and total counts of Serin recorded during the period 20 October to 31 December 2015 from the present survey are summarised in Table 13. Values of standard deviation associated with the mean daily counts are also provided in Table 13. Counts of Serin recorded from the present survey, along with ones made during the autumn 2014 survey, are shown graphically in Figure 9. Overall, count values for Siskin from the present (autumn 2015) survey are lower than those recorded from the previous autumn 2014

survey. A similar pattern of highest count values made during the period 8 November to 24 December is noted for both 2014 and 2015. However, while counts for this species are noted during the period 30 October to 7 November 2014, no counts were recorded during the same period in 2015 (Figure 9).

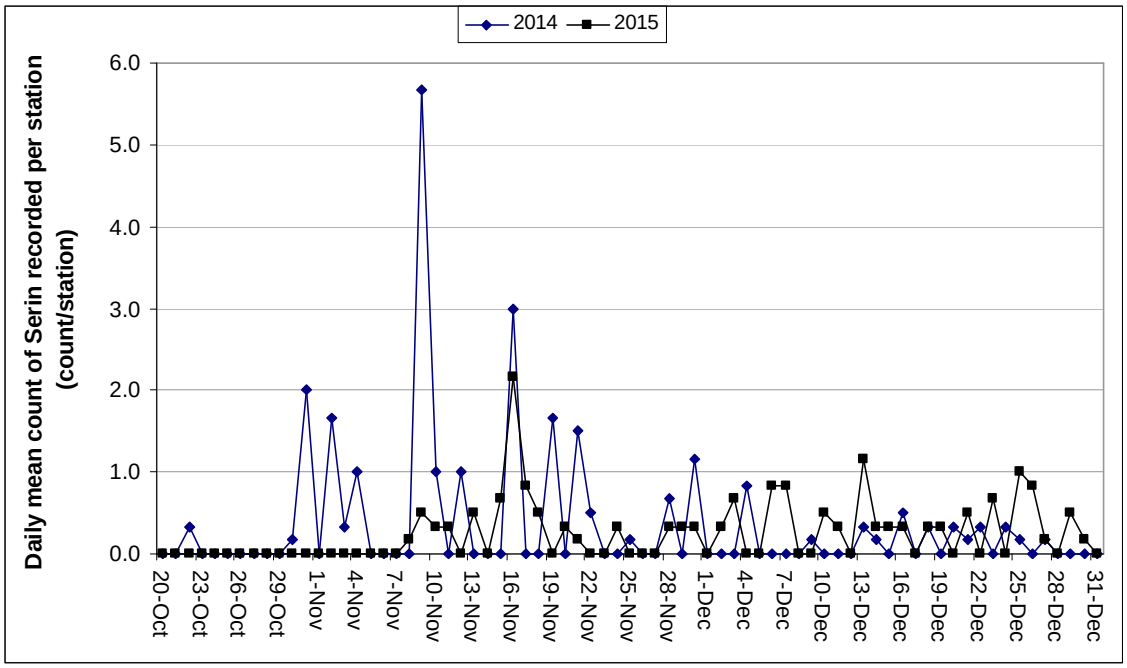
Table 13 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Serin

Date	Mean Count ± SD		Total count	Estimated Daily Influx
20-Oct-15	0.00	0.00	0	0
21-Oct-15	0.00	0.00	0	0
22-Oct-15	0.00	0.00	0	0
23-Oct-15	0.00	0.00	0	0
24-Oct-15	0.00	0.00	0	0
25-Oct-15	0.00	0.00	0	0
26-Oct-15	0.00	0.00	0	0
27-Oct-15	0.00	0.00	0	0
28-Oct-15	0.00	0.00	0	0
29-Oct-15	0.00	0.00	0	0
30-Oct-15	0.00	0.00	0	0
31-Oct-15	0.00	0.00	0	0
1-Nov-15	0.00	0.00	0	0
2-Nov-15	0.00	0.00	0	0
3-Nov-15	0.00	0.00	0	0
4-Nov-15	0.00	0.00	0	0
5-Nov-15	0.00	0.00	0	0
6-Nov-15	0.00	0.00	0	0
7-Nov-15	0.00	0.00	0	0
8-Nov-15	0.17	0.41	1	90
9-Nov-15	0.50	1.22	3	271
10-Nov-15	0.33	0.82	2	181
11-Nov-15	0.33	0.82	2	181
12-Nov-15	0.00	0.00	0	0
13-Nov-15	0.50	1.22	3	271
14-Nov-15	0.00	0.00	0	0
15-Nov-15	0.67	1.63	4	362
16-Nov-15	2.17	3.13	13	1175
17-Nov-15	0.83	1.33	5	452
18-Nov-15	0.50	1.22	3	271
19-Nov-15	0.00	0.00	0	0
20-Nov-15	0.33	0.82	2	181
21-Nov-15	0.17	0.41	1	90
22-Nov-15	0.00	0.00	0	0
23-Nov-15	0.00	0.00	0	0
24-Nov-15	0.33	0.82	2	181
25-Nov-15	0.00	0.00	0	0
26-Nov-15	0.00	0.00	0	0
27-Nov-15	0.00	0.00	0	0
28-Nov-15	0.33	0.82	2	181
29-Nov-15	0.33	0.82	2	181

Date	Mean Count ± SD		Total count	Estimated Daily Influx
30-Nov-15	0.33	0.82	2	181
1-Dec-15	0.00	0.00	0	0
2-Dec-15	0.33	0.82	2	181
3-Dec-15	0.67	1.03	4	362
4-Dec-15	0.00	0.00	0	0
5-Dec-15	0.00	0.00	0	0
6-Dec-15	0.83	1.33	5	452
7-Dec-15	0.83	0.98	5	452
8-Dec-15	0.00	0.00	0	0
9-Dec-15	0.00	0.00	0	0
10-Dec-15	0.50	1.22	3	271
11-Dec-15	0.33	0.82	2	181
12-Dec-15	0.00	0.00	0	0
13-Dec-15	1.17	2.04	7	633
14-Dec-15	0.33	0.82	2	181
15-Dec-15	0.33	0.82	2	181
16-Dec-15	0.33	0.82	2	181
17-Dec-15	0.00	0.00	0	0
18-Dec-15	0.33	0.82	2	181
19-Dec-15	0.33	0.82	2	181
20-Dec-15	0.00	0.00	0	0
21-Dec-15	0.50	1.22	3	271
22-Dec-15	0.00	0.00	0	0
23-Dec-15	0.67	1.03	4	362
24-Dec-15	0.00	0.00	0	0
25-Dec-15	1.00	1.67	6	542
26-Dec-15	0.83	1.33	5	452
27-Dec-15	0.17	0.41	1	90
28-Dec-15	0.00	0.00	0	0
29-Dec-15	0.50	1.22	3	271
30-Dec-15	0.17	0.41	1	90
31-Dec-15	0.00	0.00	0	0
			Estimated Total Influx	9,764

Source: Ecoserv, 2016

Figure 9 – Daily count of Serin recorded in 2014 and 2015 monitoring studies



Source: Ecoserv, 2016

8.24 Raw daily counts for Hawfinch recorded from the 21 sites during the present study varied between 0 and a maximum of 1 (recorded on 2 November), while the mean daily counts ranged between 0 and 0.17 (Table 14). Counts for this species were therefore very low overall: a single Hawfinch individual was recorded from the site at grid location 4480, 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 500 individuals were reported caught during autumn 2015. 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.

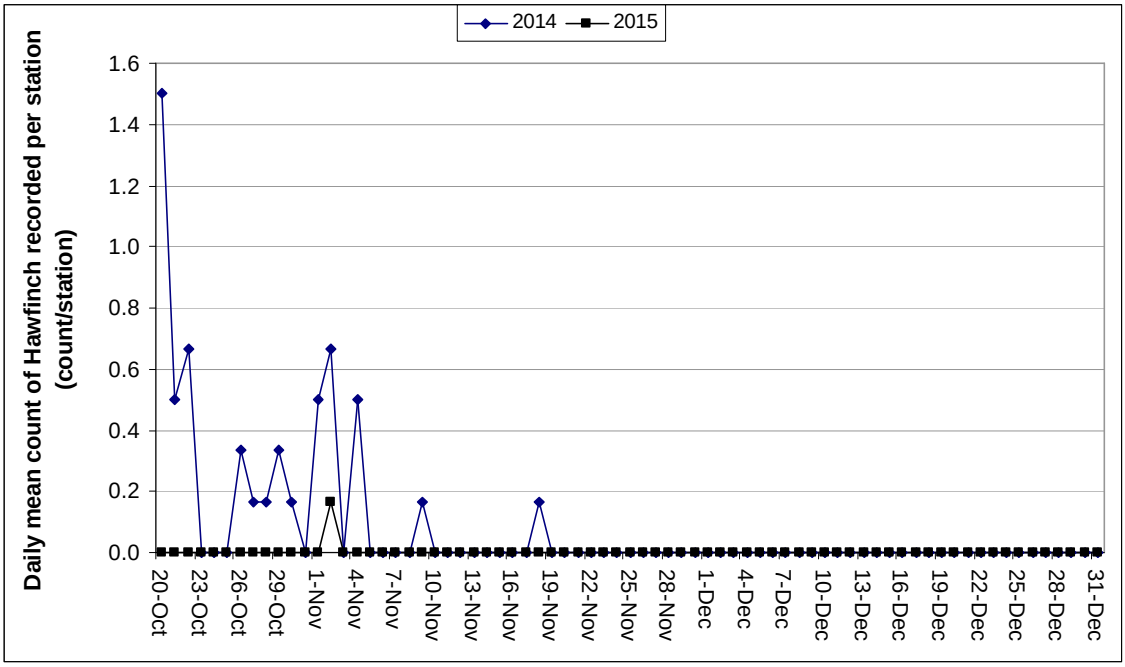
Table 14 - Values of mean (± SD) daily count and daily total count recorded from the six study sites, together with total influx of migratory Hawfinch

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

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

Source: Ecoserv, 2016

Figure 10 – Daily count of Hawfinch recorded in 2014 and 2015 monitoring studies



Source: Ecoserv, 2016

9. COMPARISON OF ESTIMATED MIGRATION WITH REPORTED CATCHES

9.1 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 (2015). 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.

9.2 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 reporting scheme) for the period 20 October to 31 December 2015.

9.3 Graphical representations of the mean daily counts made during the present (2015) survey and the daily bag counts for the same time period (20 October – 31 December) in 2015 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.

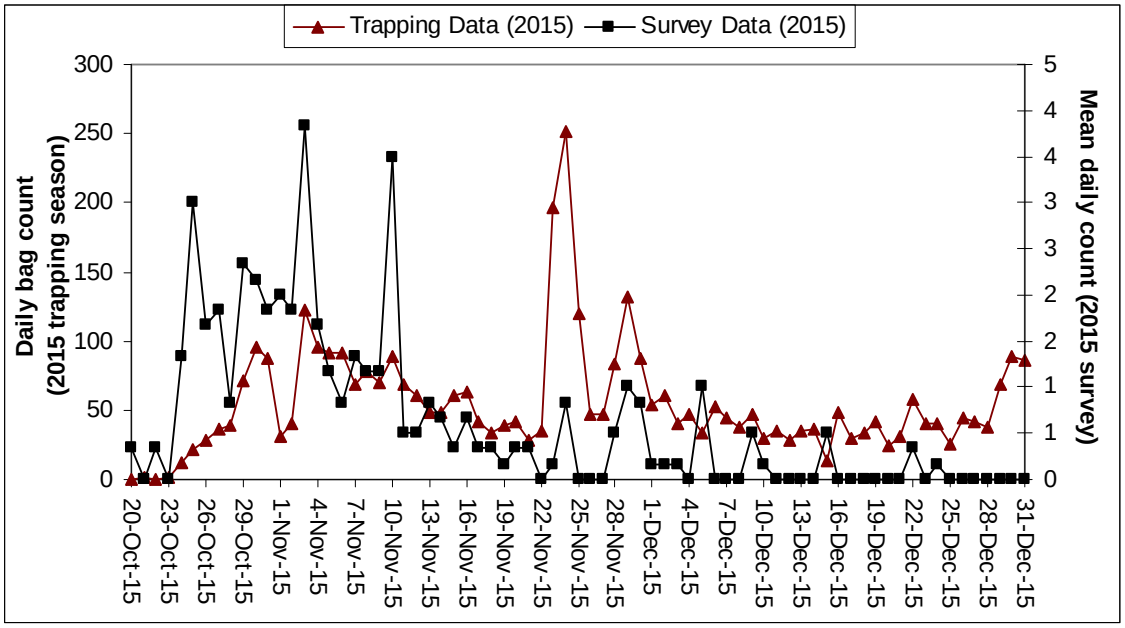
Linnet

9.4 The daily bag counts indicating the number of Linnet caught during the 2015 live-capturing seasons and the mean daily counts of Linnet made during the present (2015) survey are shown in Figure 11, while Figure 12 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 2015 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 11–12, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2015 survey are plotted on the right-side y-axis.

9.5 Overall, the highest daily counts made during the 2015 survey occurred in late October and early November, with counts declining thereafter apart from a slight increase in counts in late November to early December, while the 2015 bag data included a peak between

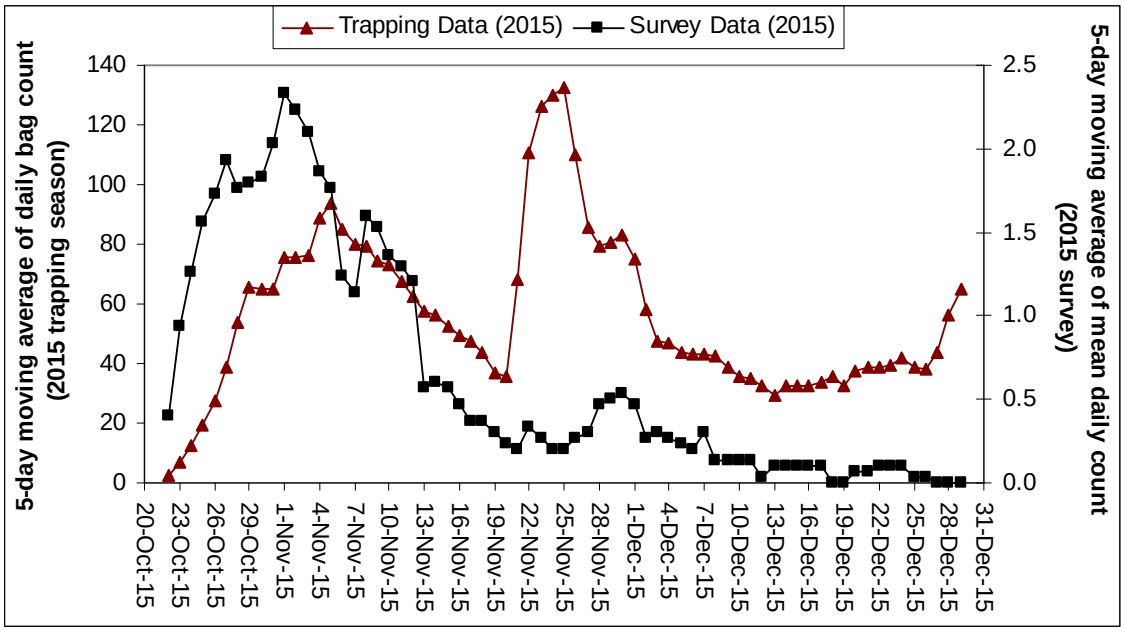
the end of October and mid-November and a second peak in late November. Thus, the general trend observed in the bag counts for 2015 and the daily counts recorded during the 2015 survey is of higher counts in the earlier part of the live-capturing season, up to around end November. Both the number of Linnet observed per day during the 2015 survey and the number Linnet caught declined thereafter, apart from a marginal increase in the bag counts recorded towards the end of December.

Figure 11 - Daily bag count of Linnet during 2015 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

Figure 12 - Moving average based on a 5-day rolling time period for the daily bag counts of Linnet during 2015 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

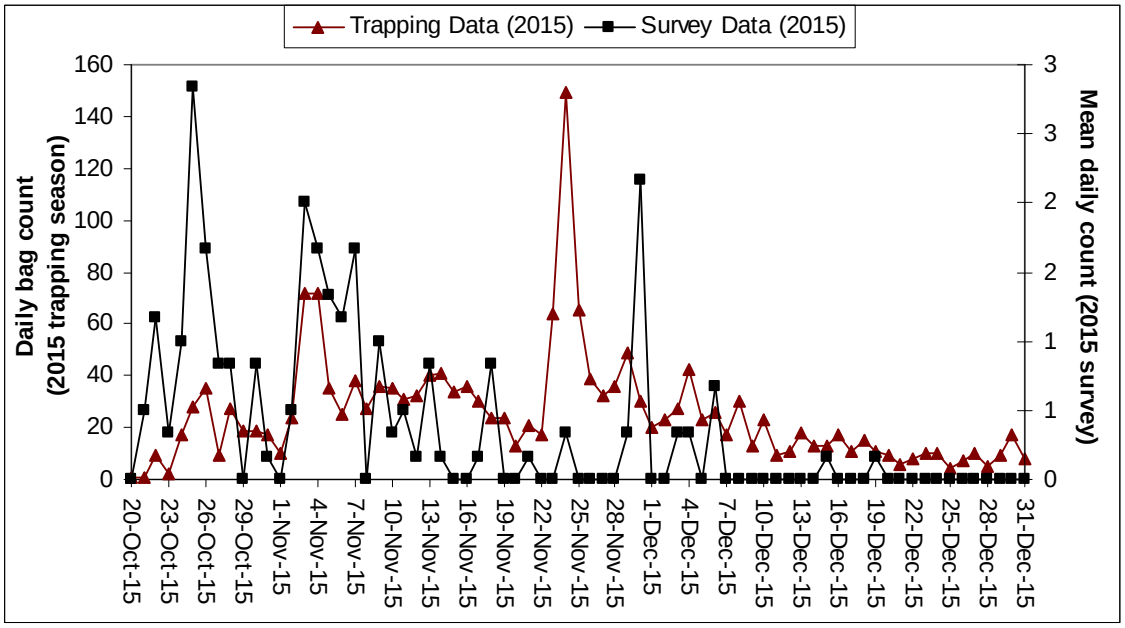
Chaffinch

9.6 The daily bag counts indicating the number of Chaffinch caught during the 2015 live-capturing seasons and the mean daily counts of Chaffinch made during the present (2015) survey are shown in Figure 13, while Figure 14 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 2015 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 13–14, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2015 survey are plotted on the right-side y-axis.

9.7 Overall, the highest daily counts recorded during the 2015 survey were made in late October and early November, but a small peak in migratory counts was also recorded between end November and early December. The highest bag counts for the 2015 season were reported towards the end of November, while bag counts were also high during early to mid-November. Thus, the general trend observed

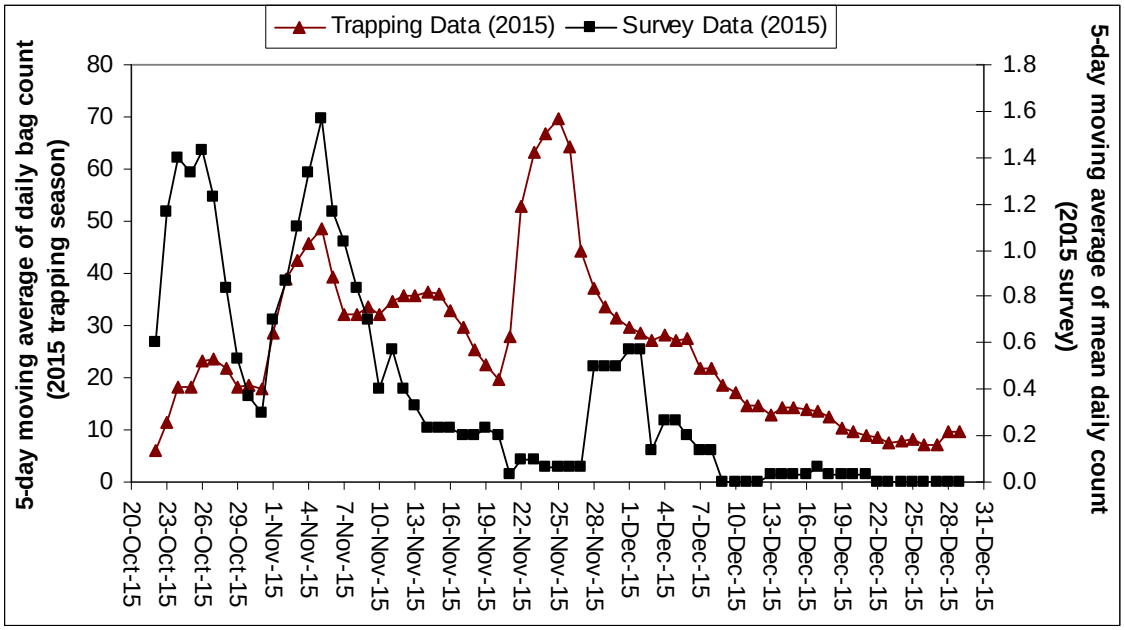
in the bag counts for 2015 and daily counts recorded during the 2015 survey is of slightly higher counts in the early part of the live-capturing season, up to around end November. Both the number of Chaffinch observed per day during the 2015 survey and the number of Chaffinch caught declined thereafter.

Figure 13 - Daily bag count of Chaffinch during 2015 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

Figure 14 - Moving average based on a 5-day rolling time period for the daily bag counts of Chaffinch during 2015 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



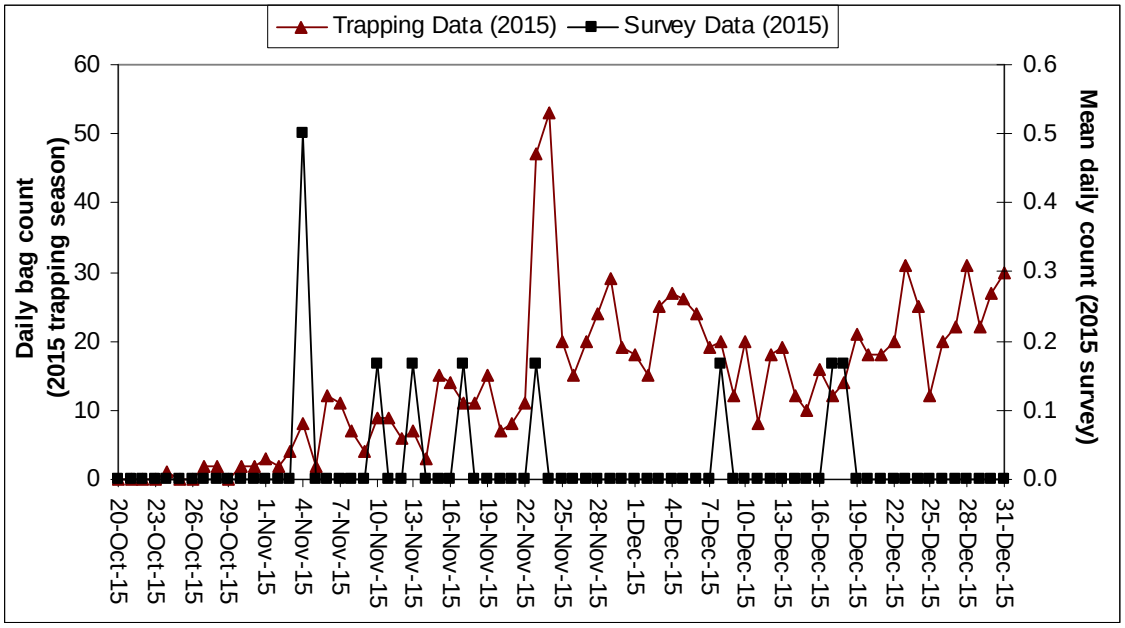
Source: Ecoserv, 2016

Greenfinch

9.8 The daily bag counts indicating the number of Greenfinch caught during the 2015 live-capturing seasons and the mean daily counts of Greenfinch made during the present (2015) survey are shown in Figure 15, while Figure 16 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 2015 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 15–16, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2015 survey are plotted on the right-side y-axis.

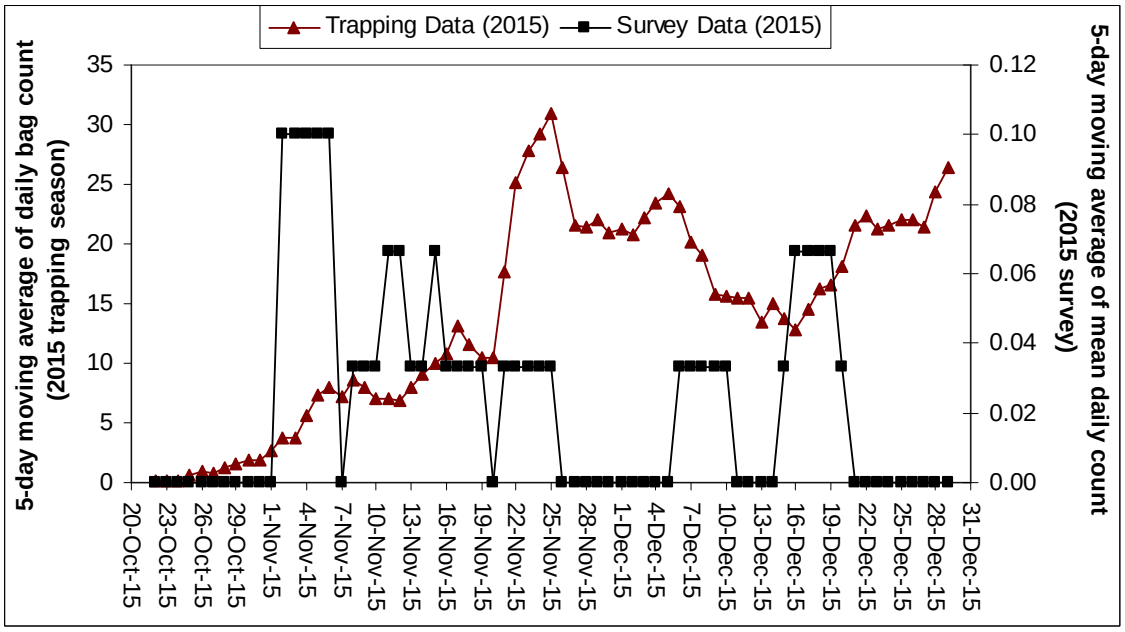
9.9 Very low counts of Greenfinch were made during the 2015 survey, with no Greenfinch individuals recorded on most days. Thus inferences on temporal trends in migration rates cannot be drawn based on this data. During the 2015 season the highest bag counts were recorded between late November and end December, with a small decline in counts in mid-December.

Figure 15 - Daily bag count of Greenfinch during 2015 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

Figure 16 - Moving average based on a 5-day rolling time period for the daily bag counts of Greenfinch during 2015 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



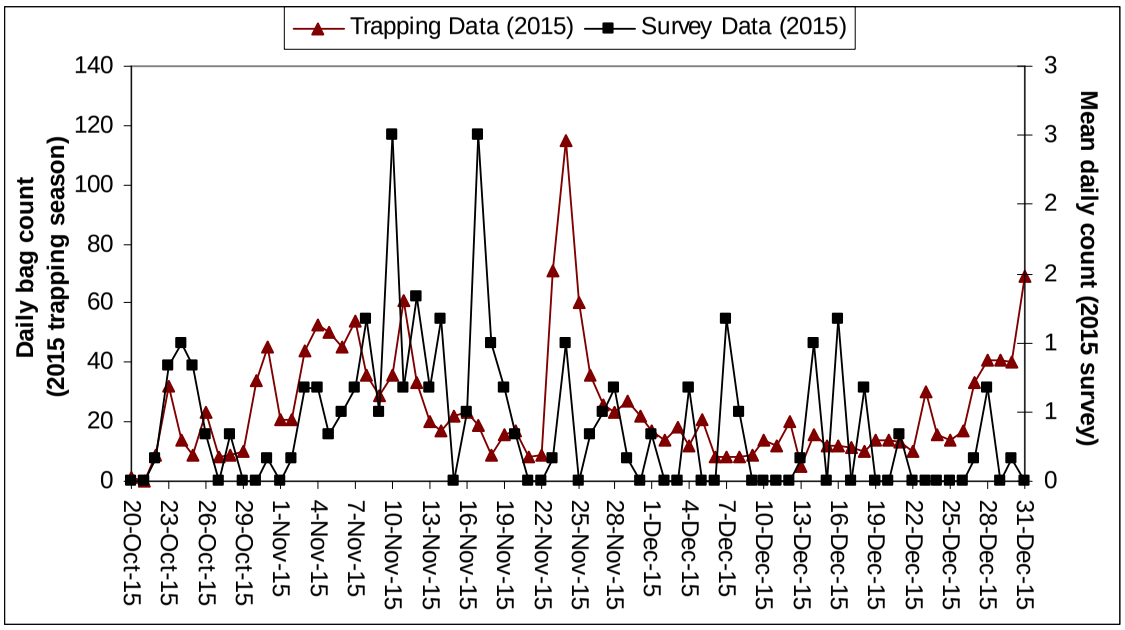
Source: Ecoserv, 2016

Siskin

9.10 The daily bag counts indicating the number of Siskin caught during the 2015 live-capturing seasons and the mean daily counts of Siskin made during the present (2015) survey are shown in Figure 17, while Figure 18 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 2015 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 17-18, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2015 survey are plotted on the right-side y-axis.

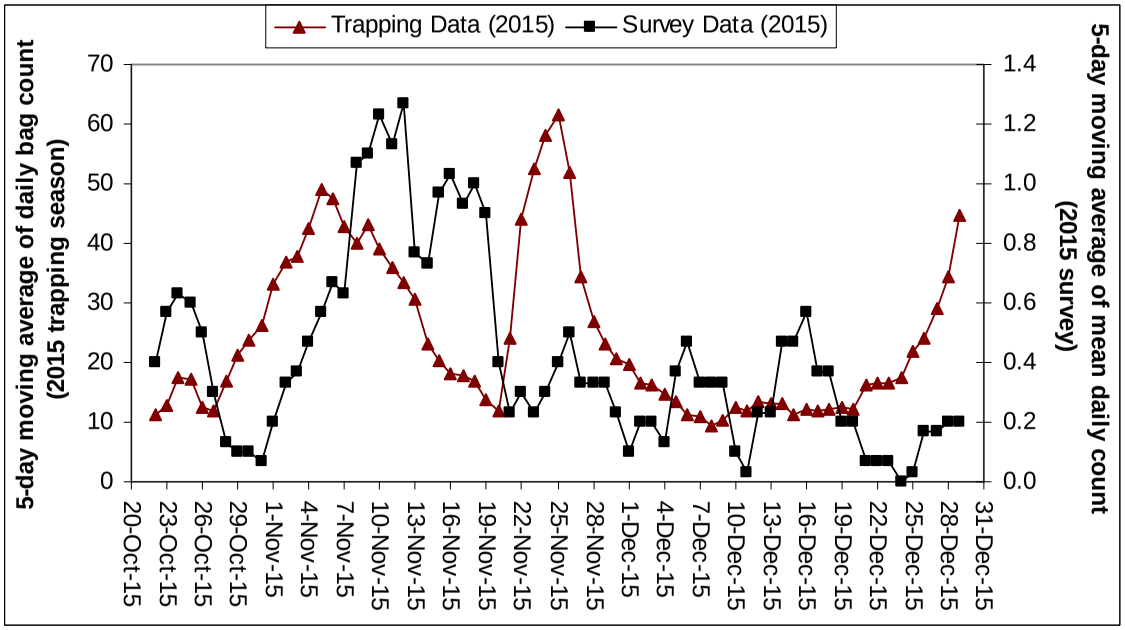
9.11 Overall, the highest daily counts recorded during the 2015 survey were made in mid-November, while the highest bag counts for 2015 were reported during early and late November. Thus, the general trend observed in the bag counts for 2015 and daily counts recorded during the 2015 survey is of slightly higher counts in the early part of the live-capturing season, particularly during the month of November. During the 2015 season, the bag counts during early December were slightly lower than in November but increased again towards the end of December, whereas the daily counts from the 2015 survey made in December remained low until the end of the survey period.

Figure 17 - Daily bag count of Siskin during 2015 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

Figure 18 - Moving average based on a 5-day rolling time period for the daily bag counts of Siskin during 2015 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



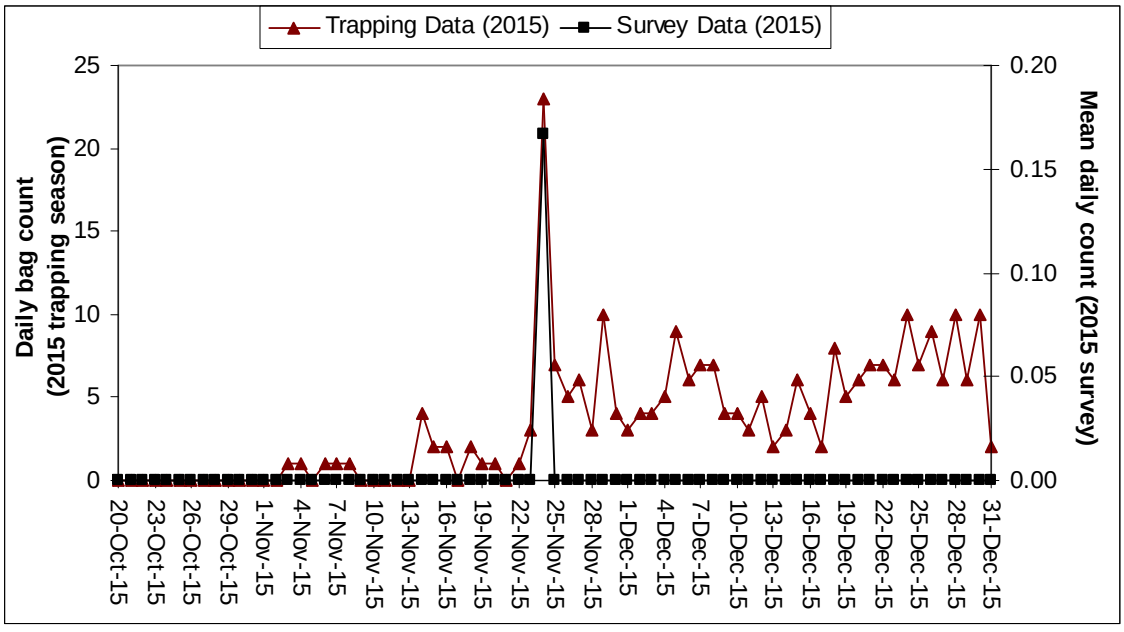
Source: Ecoserv, 2016

Goldfinch

9.12 The daily bag counts indicating the number of Goldfinch caught during the 2015 live-capturing seasons and the mean daily counts of Goldfinch made during the present (2015) survey are shown in Figure 19, while Figure 20 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 2015 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 19-20, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2015 survey are plotted on the right-side y-axis.

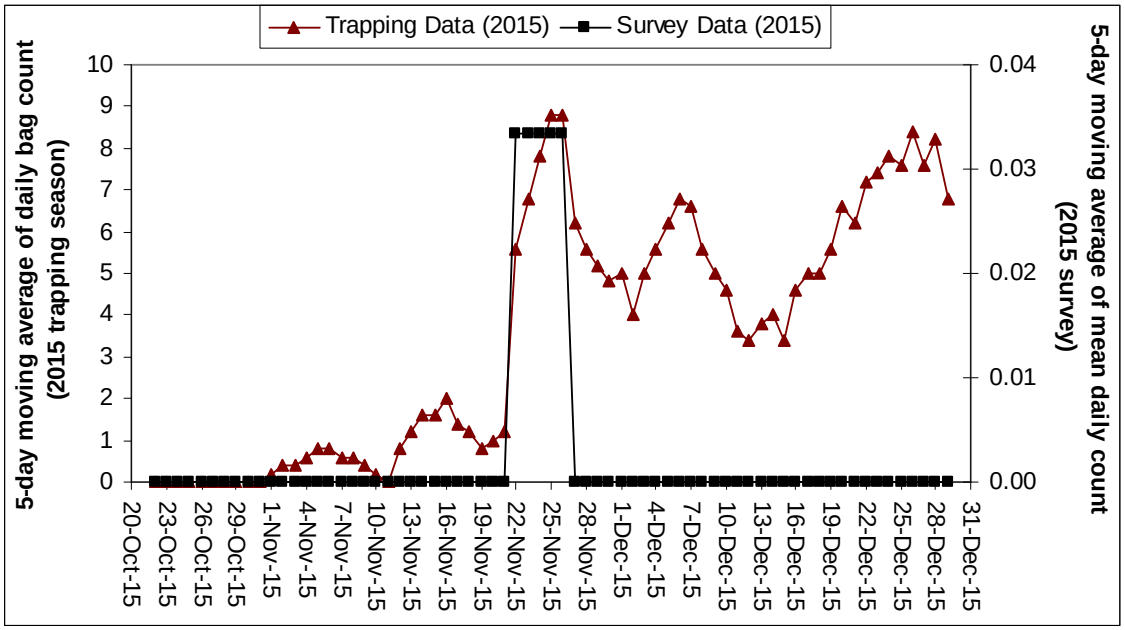
9.13 Only a single count for Goldfinch was recorded during the 2015 survey. Thus inferences on temporal trends in migration rates cannot be drawn based on this data. In the 2015 season, bag counts were very low between October and mid-November, and increased slightly from late November onwards.

Figure 19 - Daily bag count of Goldfinch during 2015 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

Figure 20 - Moving average based on a 5-day rolling time period for the daily bag counts of Goldfinch during 2015 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

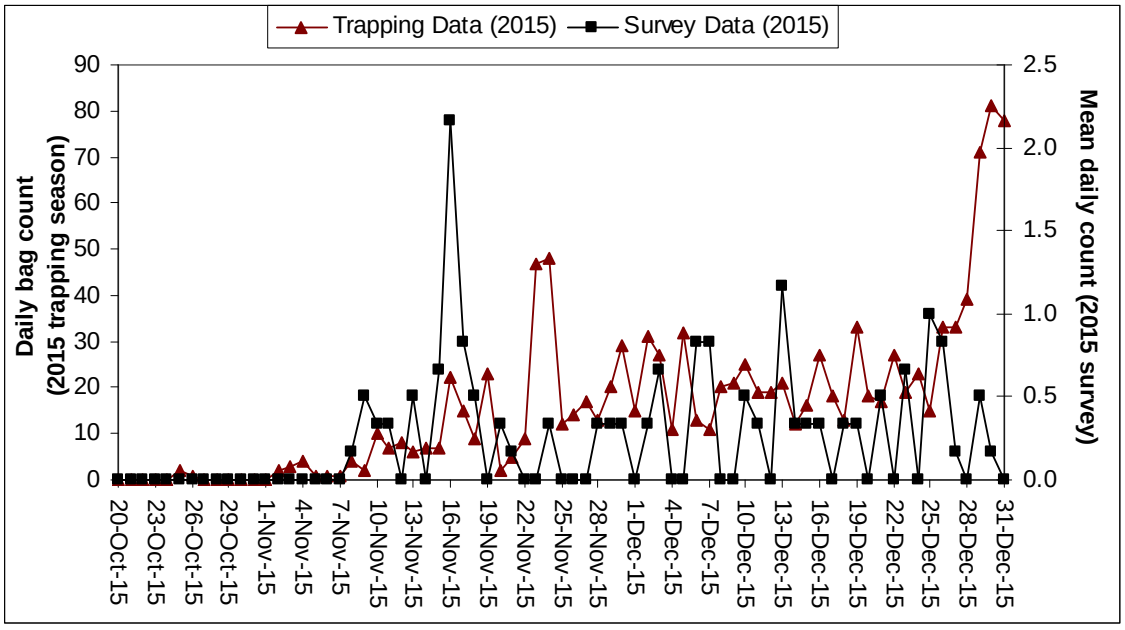
Serin

9.14 The daily bag counts indicating the number of Serin caught during the 2015 live-capturing seasons and the mean daily counts of Serin made during the present (2015) survey are shown in Figure 21, while Figure 22 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 2015 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 21-22, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2015 survey are plotted on the right-side y-axis.

9.15 Overall, the highest daily counts recorded during the 2015 survey were made in mid-November, with relatively high counts continuing until late December. The 2015 bag count data coincided with the daily counts recorded during the 2015 survey, with counts increasing in November and remaining relatively steady throughout most of

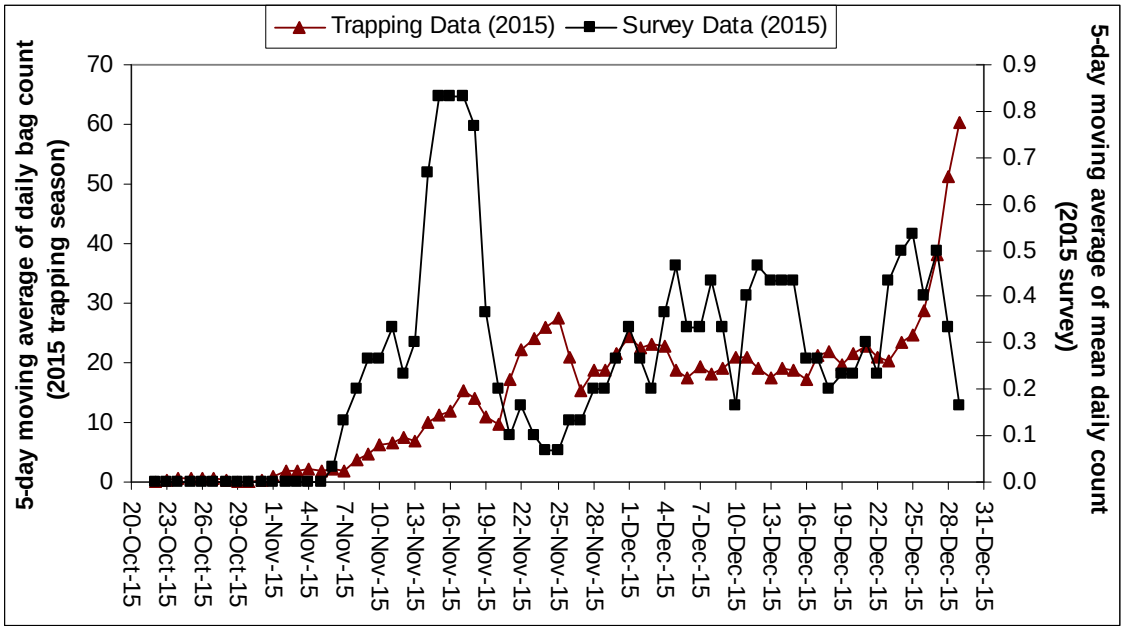
December. Thus, the general trend observed in the bag counts for 2015 and daily counts recorded during the 2015 survey is of slightly higher counts in the later part of the live-capturing season, from mid-November onwards. Live-capturing reports for 2015 indicated an increase in the number of Serin caught during the last week of December, especially between 28-31 December; the daily counts from the 2015 survey were relatively high between 23-27 December but did not increase substantially in the last 3 days of the survey period.

Figure 21 - Daily bag count of Serin during 2015 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

Figure 22 - Moving average based on a 5-day rolling time period for the daily bag counts of Serin during 2015 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



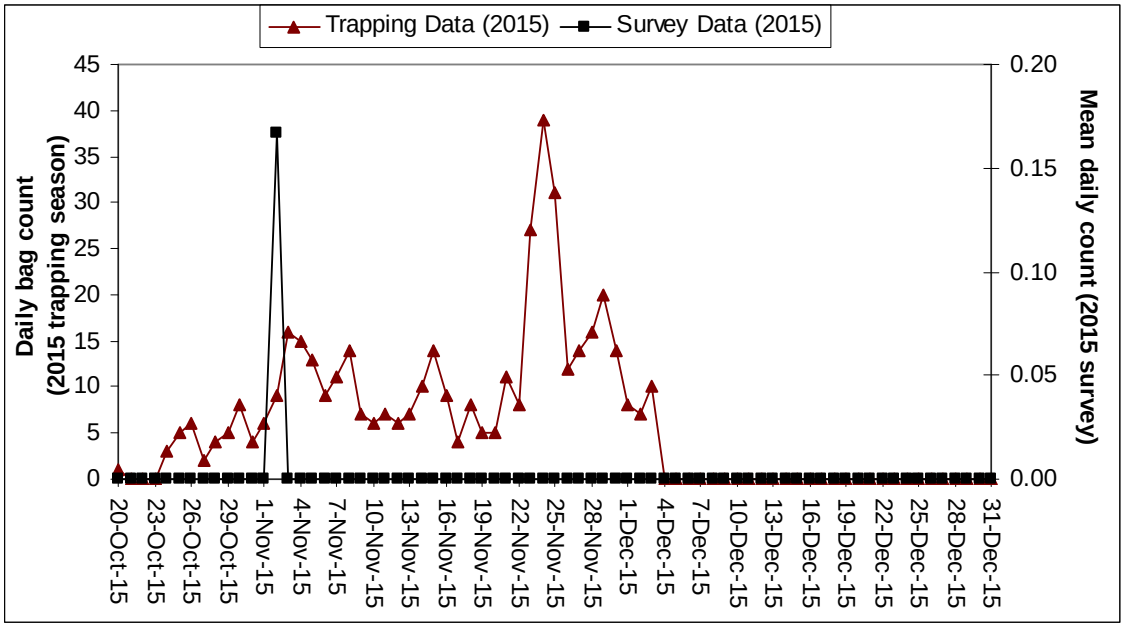
Source: Ecoserv, 2016

Hawfinch

9.16 The daily bag counts indicating the number of Hawfinch caught during the 2015 live-capturing seasons and the mean daily counts of Hawfinch made during the present (2015) survey are shown in Figure 23, while Figure 24 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 2015 survey are not directly comparable. In fact, the two sets of values are on different scales. Therefore, in Figures 23-24, two separate y-axes are used: the bag count data are plotted on the left-side y-axis, whereas the counts from the 2015 survey are plotted on the right-side y-axis.

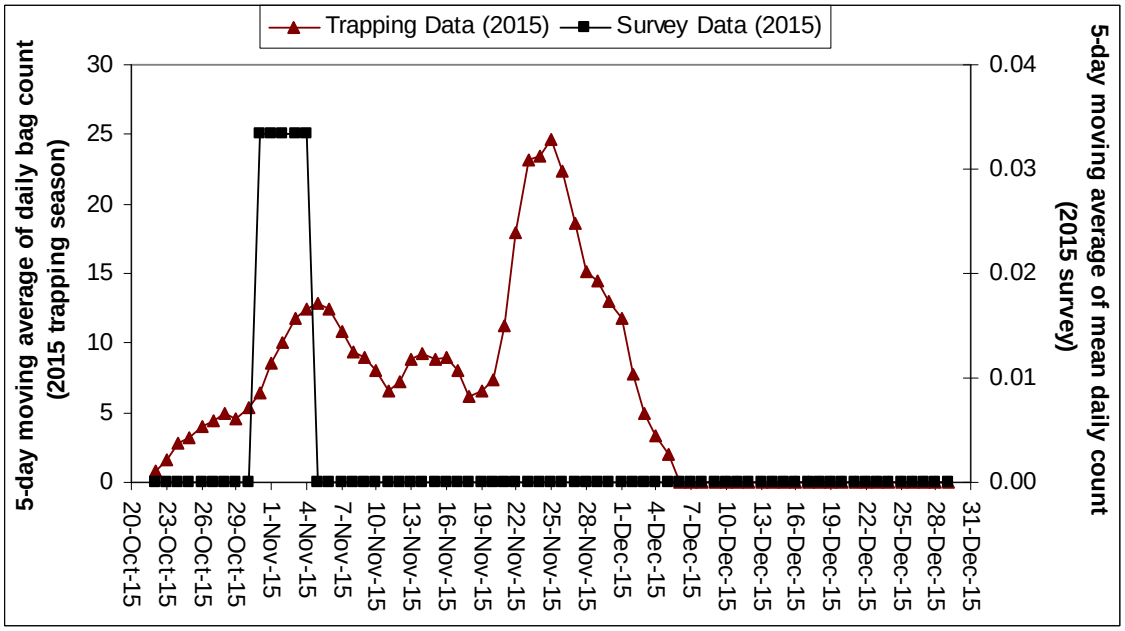
9.17 Only a single count for Hawfinch was recorded during the 2015 survey. Thus inferences on temporal trends in migration rates cannot be drawn based on this data. The 2015 bag counts were highest in early November and between end November and early December, with no Hawfinch being caught after 3 December 2015.

Figure 23 - Daily bag count of Hawfinch during 2015 (red line; values on left-side y-axis), together with the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

Figure 24 - Moving average based on a 5-day rolling time period for the daily bag counts of Hawfinch during 2015 (red line; values on left-side y-axis), and for the mean daily counts recorded during the 2015 survey (black line; values on right-side y-axis), for the period 20 October to 31 December



Source: Ecoserv, 2016

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 15 October 2015 (around 50 officers) [Figure 25]. 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 25: Training seminar held on 15 October 2015

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. 504.124) 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. Moreover, following the closure of an Autumn live capturing season, for every one thousand (1,000) Autumn live-capturing licences issued that year, a minimum of three (3) police officers shall be on duty during the hours of daylight.

10.3 Given that there were 3,877 licences to capture finches, this translates into 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 4,206[30], 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 2015 live capturing season (20 October to 31 December 2015), the enforcement authorities deployed a total overall complement of 73 officers to oversee and supervise parameters of the derogation (Table 15).

Table 15: Deployment of enforcement officers during the Autumn 2015 live-capturing season

Entity	Number of officers	Duties
Administrative Law Enforcement Unit (ALE) of the Police	27	Field patrols, surveillance, inspections, investigations, prosecution
District police officers seconded to the ALE	27	Field patrols, surveillance, inspections, investigations, prosecution
Armed Forces of Malta	15	Field patrols and surveillance
Wild Birds Regulation Unit	4	Verification of compliance with registration conditions; field inspection of sites; assistance to police in prosecution processes, other expert services
Total	73	

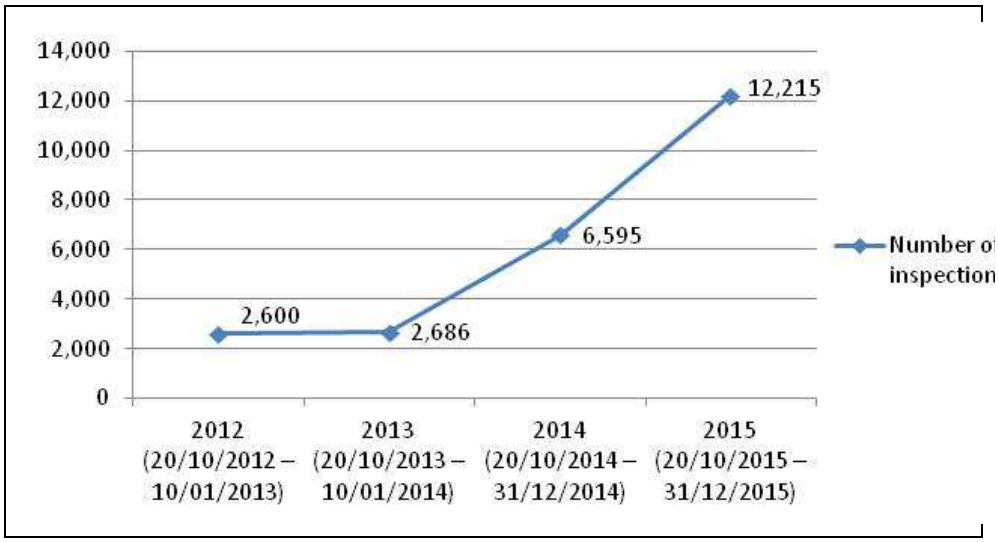
Source: Wild Birds Regulation Unit, 2015

[30] 3,877 finch live capturing licences + 1,128 Golden Plover and Song Thrush licences – 799 persons in possession of both categories of licence = 4,206 licensed live-capturers

10.5 Police and Armed Forces of Malta officers maintained a daily field deployment that ranged between a maximum of 52 officers and a minimum of 23 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 12,215 on-site inspections (9,568 in Malta and 2,647 in Gozo) in various localities around the Maltese Islands, which represents a twofold increase in inspections in comparison with the number of inspections conducted during the previous autumn live-capturing season (n2014=6,595) and a five-fold increase when compared with the 2012 (n2012=2,600) and 2013 live-capturing derogations (n2013=2,686), as shown in Fig. 26 below.

Figure 26 – Number of site inspections carried out during autumn live-capturing derogations



Source: Wild Birds Regulation Unit and Malta Police Force, 2016

10.7 In addition to site inspections, a total of 1,888 spot-checks (898 in Malta and 990 in Gozo) were conducted on individual licensees whilst they were carrying out their activity, which implies that almost half of all licensees (44.8% of 4,206 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 2015 was twice the amount of spot checks carried out during the previous autumn live-capturing season (n2014=956).

10.8 Further inspections were also carried out after the closure of the autumn live-capturing season and until the end of January 2016 by the ALE core staff complement. In addition, during the season, the WBRU also carried its own site inspections to verify compliance with site registration requirements. Such inspections were not included in the overall inspection statistics.

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

- Verify that live-capturers were in possession of all requisite documents;
- Verify that the Carnet de Chasse records were in accordance with regulations;
- Verify that any captured birds had been immediately reported via mobile phone;
- 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. 504.71) and other applicable legislation.

10.10 In order to facilitate the conduct of their duties, enforcement officers had 10 vehicles 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 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.

10.11 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.

10.12 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

10.13 During the inspections carried out by enforcement staff throughout the derogation period, a total of 62 live-capturing-related infringements that qualified for legal action were detected. The nature of these infringements is outlined in Table 16 below, which also presents comparison with the same statistics for Golden Plover and Song Thrush derogation implemented in 2013 and 2014. Legal action is in the process of being taken against the 58 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)**			**Overall trend in offence disclosure[31]**
	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	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	Increase
Trapping using nets of prohibited mesh size	6	4	10	0	0	0	0	0	0	Decrease
Using in excess of 21 live (finches) decoys while trapping	N/A	N/A	N/A	5	4	9	6	3	9	No Change
Using in excess of 10 live (Song Thrush or Golden Plover)	0	0	0	0	0	0	0	0	0	No Change

[31] The trend of the values over the three-year period was determined by analysing the slope of a linear regression line drawn across a graph of Incidences (Y) and Years (X). This was achieved in Microsoft Excel using the 'Slope' function.

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

Source: Wild Birds Regulation Unit, Malta Police Force, 2016

10.14 When compared with the 2013 and 2014 live-capturing seasons, the rate of disclosure for certain types of violations in 2015 has increased (illegal use of pre-recorded bird calls [n=33], trapping during unpermitted hours [n=1] and trapping on unregistered sites [n=5]). This is attributable to much higher intensity of inspections and spot-checks in 2015 in comparison with 2013 (five-fold increase) and 2014 (two-fold increase). As a result, a greater number of persons were prosecuted for offences committed during the 2015 season in comparison with the number of persons prosecuted for offences committed during the previous two seasons.

10.15 On the other hand, there has been a decrease in the number of other offences, such as trapping using unmarked decoys (one case disclosed in 2015), trapping for protected species (two cases disclosed in 2015, in comparison with 18 cases in 2013) and trapping without a licence (9 cases disclosed in 2015, in comparison with 13 cases in 2013). 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 17 and Figures 27–28 below. The same levels of deterrent that had increased exponentially by 2014 were also applicable during the 2015 live-capturing season.

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

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

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

Maximum imprisonment (months)	24	24	24	24
Maximum term of suspension of licence (months)	Permanent	Permanent	Permanent	Permanent

Source: Wild Birds Regulation Unit, 2015

Figure 27 – Increase in minimum fines for illegal targeting of protected birds

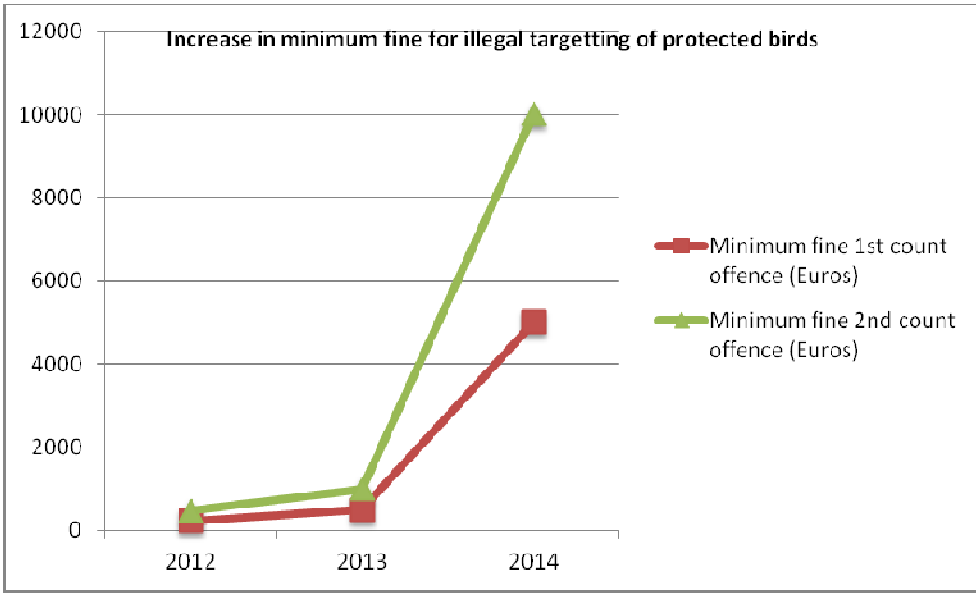
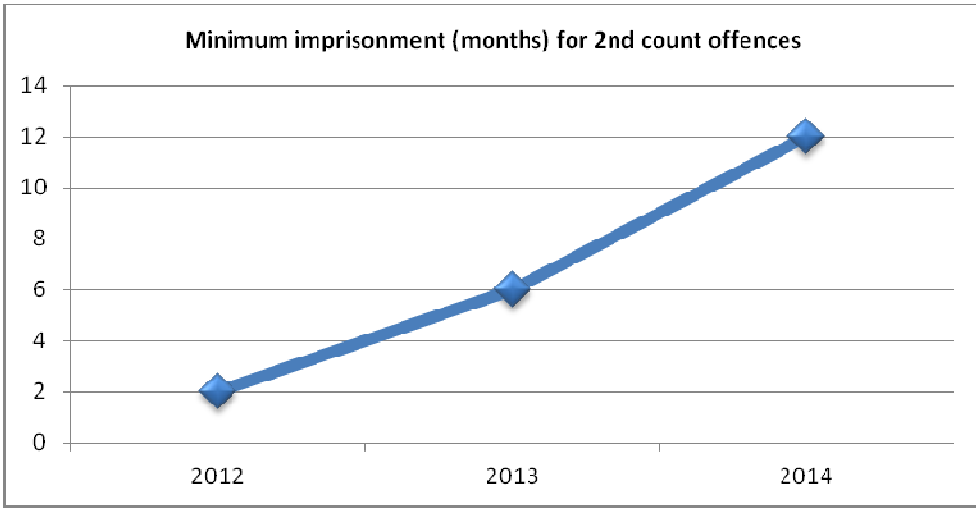


Figure 28 – Increase in minimum imprisonment for illegal targeting of protected birds



Source: Wild Birds Regulation Unit, 2015

10.16 In addition to the reforms implemented in October 2013 and in March 2014, which resulted in the increase in penalties summarised above, the Maltese authorities also introduced a system of administrative fines for minor offences, mostly of administrative nature, which previously used to detract precious judicial and prosecution resources on hundreds of minor cases, slowing down judicial process as a whole. As a result of the introduction of this system in October 2013, minor offences are dealt with swiftly through an automatic administrative fine, instead of criminal prosecution. The introduction of this system resulted in greater efficiency and swiftness of the judicial process.

10.17 During the 2015 live-capturing season, 33 persons were subjected to an automatic administrative fine of €250 each for illicit 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 25 persons apprehended during the 2015 live-capturing season were subject to criminal prosecution. By the time of compilation of this report, 20 cases were still *sub judice* whilst the remaining five pertaining to exceedance in the number of live-decoys, were heard by the Courts, with four cases resulting in convictions (€500 fine each) and one case resulting in acquittal due to insufficient evidence.

11 CONCLUSIONS

11.1 The application of finch live-capturing derogation in autumn 2015 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 will satisfy 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 will ensure that the relevant legal parameters enacted in pursuance of point (a) above will be 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 and 2014 and further increased upon the already unprecedented intensity of enforcement attained during the 2014 finch live-capturing derogation. The use of latest technologies (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.