

**REPORT ON THE OUTCOME OF THE
AUTUMN 2022 FINCHES RESEARCH
DEROGATION**



MARCH 2023

WILD BIRDS REGULATION UNIT

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ENCLOSURES

- Annex I** Special Licence for the Autumn 2022 Finches Research Derogation
- Annex II** Report on a survey of the influx of migratory finches (Common Linnet, Common Chaffinch, European Serin, European Goldfinch, European Greenfinch, Hawfinch, Eurasian Siskin) over the Maltese Islands, conducted between October 2022 and January 2023 (Ecoserv, 2023)

GLOSSARY OF TERMS

Illegal possession of finches without required rings	Illegal possession of finches not used as live-decoys that are either not fitted with an official R16U ring, fitted with a fake closed ring or not fitted with a ring, including finch mutations (colour variants) without closed ring or with a ring larger than the required standard for the species.
Trapping on unregistered sites	Trapping on an active clap-net pair (<i>mansab</i>) not registered with the Wild Birds Regulation Unit, or the clap-net pair was not authorised to be active for that specific research period (not included at application stage).
Trapping using unmarked or incorrectly marked decoys	The use of finch decoys not fitted with an official R16U ring, fitted with fake closed ring or not fitted with a ring.
Unattended trapping site	Unmanned trapping site (clap-net pair <i>mansab</i>) left active with nets not covered or removed, even if without live-decoys.

1. INTRODUCTION

1.1 This voluntary report provides a full account of the outcome of the derogation allowing a research derogation for finches under Article 9(1)(b) 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') during 2022. It has been compiled in addition to Malta's formal derogation report submitted annually pursuant to Malta's reporting obligation under Article 9 of the Birds Directive. In this regard, this report considers various relevant aspects of the application of this derogation, including:

- the decision-making process leading up to the application of a research derogation;
- the special licensing process undertaken prior to application of derogation;
- the details of each specimen and its scientific ring identification number reported via the ring recovery form by the licensees;
- the enforcement efforts in place to ensure the strict supervision of the research derogation;
- 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 TO CARRY OUT SCIENTIFIC RESEARCH ON SEVEN FINCH SPECIES

GENERAL BACKGROUND

2.1 Owing to its geographic location, situated along the easternmost fringe of the central African-Eurasian flyway and between the European and African coasts, Malta is in an optimal position to provide a stop-over for long-distance migratory birds. This unique geographical location, coupled with the inherent richness of the resident and non-resident bird population, have in turn given rise to a deeply rooted tradition of recreational bird trapping on the Maltese Islands.

- 2.2 Bird trapping in Malta has traditionally been performed with the use of mist-nets or clap-nets, which are set up either in open land or wooded areas depending on the target species. The main objective of traditional trapping was the keeping of the bird. This practice can be traced all the way back to Phoenician and Roman times, but it was impacted significantly by the development of the environmental movement in the twentieth century and, most notably, following Malta's accession to the European Union.
- 2.3 At the time of Malta's accession and following the expiry of specific transitory provisions provided for in Malta's Act of Accession to the European Union on 31 December 2008,¹ it was assumed by the local trapping community that the activity could continue to be performed subject to certain conditions.
- 2.4 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 for the capturing and keeping of finches, except through a derogation within the parameters of Article 9(1)(c) of the Birds Directive.
- 2.5 Following the judgment of the Court of Justice of the European Union in *Commission v Malta*,² it was confirmed Malta's derogation regime under Article 9(1)(c) of the Birds Directive which authorised the live-capturing utilising traditional methods (clap-net system) of seven species of wild finches, namely Common Chaffinch (*Fringilla coelebs*), Common Linnet (*Linaria cannabina*), European Goldfinch (*Carduelis carduelis*), European Greenfinch (*Chloris chloris*), Hawfinch (*Coccothraustes coccothraustes*), European Serin (*Serinus serinus*), and Eurasian Siskin (*Spinus spinus*) for keeping purposes was illegal on account of its failure to satisfy all the requirements of the same provision. A significant knowledge gap regarding data on the migration flows of wild finches in Malta was also identified.

¹ Annex XI to the Act of Accession: Malta, Section D. "Nature Protection".

² Case C-557/15, *Commission v Republic of Malta* [2018] EU:C:2018:477.

2.6 Consequently, it became clear that further scientific research to determine the reference population of the various finch species was required if the practice of finch trapping, including the eventual keeping of birds, were to potentially continue. This resulted also to a change of culture wherein trapping as a recreational activity has shifted towards more environmentally conscious practices, in which conservation concerns play a relevant role.

RECOMMENDATIONS ON THE PROPOSED ENACTMENT OF RESEARCH FRAMEWORK REGULATIONS AND APPLICATION OF ARTICLE 9(1)(B) DEROGATIONS STARTING AUTUMN 2020 TO IMPROVE THE KNOWLEDGE BASE ON THE REFERENCE POPULATION OF THE SEVEN FINCH SPECIES.

2.7 Following the judgment of 21 June 2018, Malta repealed the legal framework that had been in force since 2014, which allowed trapping activities with a keeping element during a specific timeframe under the derogation provided for in Article 9(1)(c) of the Birds Directive.³

2.8 In tandem, following the statements of the Court of Justice confirming the existence of a significant knowledge gap underpinning the previous Maltese derogation regime, a realisation evolved around the need to collect exhaustive and reliable data about the migration routes and origins of finches migrating over the Maltese Islands. Such data would be of relevance for conservation purposes as well as for the overall implementation of Malta's legislation, possibly including, as the case may be, a future derogation under Article 9(1)(c) of the Birds Directive in accordance with the case-law of the Court of Justice.

2.9 It was however clear that the knowledge gap could not be addressed by the traditional means of data collection utilised to date, namely through the use of mist-nets, since this methodology had not produced sufficient data in the course of almost a century.

2.10 As a result, the Maltese authorities designed a framework under Article 9(1)(b) of the Birds Directive to put into place a research project to obtain the necessary data that had been lacking in the past. The first framework

³ Framework For Allowing a Derogation Opening an Autumn Live-Capturing Season For Finches (Revocation) Regulations, 2018, Legal Notice 383 of 2018, available at <https://legislation.mt/eli/ln/2018/383/eng>.

was introduced in 2020 by means of the Conservation of Wild Birds (Framework for Allowing a Research Derogation to Determine Malta's Reference Population of Seven Finch Species Regulations, 2020 ([Legal Notice 399 of 2020](#))). The Regulations introduced provisions allowing a research derogation for seven finch species (*Chaffinch Fringilla coelebs*, *Linnet Linaria cannabina*, *Goldfinch Carduelis carduelis*, *Greenfinch Chloris chloris*, *Hawfinch Coccothraustes coccothraustes*, *Serin Serinus serinus* and *Siskin Spinus spinus*).

- 2.11 On 14 October 2021, these Regulations were repealed by virtue of the Conservation of Wild Birds (Framework for Allowing a Research Derogation To Determine Malta's Reference Population of Seven Finch Species (Repeal) Regulations, 2021 ([Legal Notice 387 of 2021](#)) and a new scheme was introduced by way of the Conservation of Wild Birds (Framework for Allowing a Derogation to Carry out Scientific Research on Seven Finch Species) Regulations, 2021 ([Legal Notice 394 of 2021](#)).
- 2.12 Subsequently, by means of the Conservation of Wild Birds (Declaration on a Derogation Allowing Scientific Research on Seven Finch Species) Regulations, 2021 ([Legal Notice 395 of 2021](#)), the Minister issued a Declaration on a derogation allowing scientific research for 2021.
- 2.13 The revamped derogation regime sought to address the concerns raised by the Commission in the context of infringement proceedings against Malta by, *inter alia*, providing a clearer and focused emphasis on the conservation and scientific objectives of the finches research project as opposed to the former reference to a hypothetical future application of an Article 9(1)(c) derogation.
- 2.14 The research derogation was reapplied throughout 2022, *albeit* with some amendments introduced by virtue of the Conservation of Wild Birds (Framework for Allowing a Derogation to Carry out Scientific Research on Seven Finch Species) (Amendment) Regulations, 2022 ([Legal Notice 256 of 2022](#)). The definition of 'live-decoy' listed in regulation 2 of the principal regulations was amended to also include finches of the relevant species fitted with closed rings. Through this amendment, licensees were allowed to utilise captive-bred specimens from the relevant seven finch species for the purpose of call birds ('għajat') and fluttering decoys ('taħrik'). Concurrently,

regulation 13(3) of the principal regulations concerning enforcement was amended to include the seizure of birds from the relevant species not fitted with a seamless closed ring.

THE SCOPE OF THE RESEARCH DEROGATION REGIME

ANALYSIS

- 2.15 Article 10 of the Birds Directive imposes an obligation on the Member States to encourage research and any work required as a basis for the protection, management and use of the population of all species of birds. This includes research and work on the listing and ecological description of areas particularly important to migratory species on their migratory routes and as wintering and nesting grounds, the listing of data on the population levels of migratory species as shown by ringing and assessing the influence of methods of taking wild birds on population levels (see Annex V of the Birds Directive).
- 2.16 The objective of Malta's finches research project is twofold: **to close a knowledge gap concerning the scientific data on finches that migrate over Malta and to subsequently use this knowledge base to guide policy on the protection of these species and their habitats at the flyway level.** Finches are good indicators of healthy ecosystems and thus, many other species and biodiversity in general will also benefit from the outcome of this study. The study design is based on the following research question: *where do finches that migrate over Malta during post-nuptial (autumn) migration come from?*
- 2.17 The requirements of Article 9(1)(c) of the Birds Directive ("judicious use", "selectivity", "small number", "supervision") do not apply to the finches research programme. The requirement that there is "no other satisfactory solution" remains however relevant. The derogation must also comply with the precise formal conditions set out in Article 9(2) of the Birds Directive, which are intended to limit derogations to what is strictly necessary and to enable the Commission to supervise them. An Article 9(1)(b) derogation must, therefore, also be subject to a proportionality test. The Court of Justice of the European Union considers that "although Article 9 [...] authorizes wide

derogations from the general system of protection, it must be applied appropriately in order to deal with precise requirements and specific situations".⁴

LEGAL BASIS – THE BIRDS DIRECTIVE, APPLICABLE JURISPRUDENCE AND POLICY

No other satisfactory solution

- 2.18 As stressed by the Court of Justice of the European Union in its judgment in *Commission v Ireland*,⁵ Member States must transpose Article 10 of the Birds Directive in their national legal order. In accordance with this obligation, Malta decided to launch a research project that deals with some of the activities specified in Annex V of the Birds Directive.

Proportionality test

- 2.19 A derogation under Article 9(1)(b) is only allowed to the extent it is strictly necessary to pursue the identified objective. This principle of proportionality applies both to the duration of the derogation, as well as to the means allowed under the derogation, the number of captured birds and the type of birds that are subject to the derogation. In other words, the derogation should only be granted as long as it is required to attain its objective. The objective of the research project is to obtain conclusive information on the regions of origin of the seven finch species during their post-nuptial (autumn) migrating through Malta. This means that as soon as this conclusive evidence is obtained, the research project will stop.

Limitation on the numbers of birds caught, ringed, controlled or tagged

- 2.20 The research project does not provide limitation on the numbers of birds to be caught, ringed, controlled or tagged, given that the derogation regime has a specific research purpose. The project does not allow the keeping of any specimen of the seven finch species longer than it is strictly necessary to fit the specimen with a ring (by licensed bird ringers, not by data controllers) or to gather ring details within the context of a recapture (by

⁴ Case C-118/94, *Associazione Italiana per il World Wildlife Fund* [1996] ECR I – 1224, para 21.

⁵ Case C-418/04, *Commission v Ireland* [2007] ECR I-10947.

bird ringers and data controllers) or affixing satellite-tags or geo-locators (by bird ringers and data controllers), if and when such tags are commercially available.

- 2.21 Given that, when it comes to the data controllers, the research project is limited to controlling birds (without affixing scientific rings since the participants are not licensed bird-ringers), there is no reason to impose any limitation of numbers of birds to be controlled. Considering the pursued objective, in fact, the more birds that are being controlled, the better to increase the sampling effort at the national level. The logic of Article 9(1)(b) of the Birds Directive is totally different from the logic of Article 9(1)(c).

Selectivity

- 2.22 Although no reference is made to the selectivity-requirement in Article 9(1)(b) of the Birds Directive, any capture of specimens must serve the pursued objective. Given that the objective of the derogation is to conduct research on specific finch species, the capturing methods must be finch-selective. The selectivity-requirement therefore plays a central role in the application of the Article 9(1)(b) derogation. Unlike the mist-net system, which is the least selective of all nets, the finches clap-net system is species-specific and thus the most selective method of capture. In fact, the clap-net system *can only operate if it uses other birds to attract their wild counterparts*.⁶ Without live-decoys to attract migratory conspecifics, the clap-net system is rendered defunct.

Strict supervision

- 2.23 Although no reference is made to the strict supervision-requirement in Article 9(1)(b) of the Birds Directive, a strict enforcement framework is a prerequisite for an effective implementation of any derogatory regime. The supervision-requirement therefore is relevant in light of the proportionality test.
- 2.24 The research project provides for an unprecedented level of minimum daily police spot-checks in all the regions, as explained further below. Moreover,

⁶ This assertion was also confirmed by Birdlife Malta on 13 February 2017 (vide: <https://youtu.be/FSslrjKNLA8?t=44> (0:52))

no finches research stations (clap-nets) are allowed in protected areas as defined in the overarching [Conservation of Wild Birds Regulations \(Subsidiary Legislation 549.42 of the Laws of Malta\)](#).

- 2.25 In addition, the finches research derogation regime sets a clear obligation to report ringing details, including the automatic rendering of licensee who failed to submit the ring recovery form as ineligible to obtain another special licence the following research period, if such period is declared.

APPLICABLE PROVISIONS OF NATIONAL LAW

- 2.26 The Conservation of Wild Birds Regulations is the main legal instrument which transposes the Birds Directive into national legislation. The following provisions of these Regulations are of particular relevance:

- Regulation 2 defines, *inter alia*, the geographical areas where the clap-net system is prohibited (definition of 'protected area').
- Regulation 8 prohibits any 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 capturing derogation regimes (i.e., live-capturing to keep or capturing for scientific purposes followed by release).
- 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 during consideration of any such derogation, which includes a mandatory recommendation 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 (in consultation with, and following approval of, the Cabinet of Ministers), 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, within a statutory period of three weeks from the publication of such decisions in the Gazette, the 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 the provisions of these regulations in conjunction with the Police.
- Regulation 27 prescribes the way 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 the relevant licence issued under these regulations for life, as well as the confiscation of *corpus delicti*. Regulation 27 also provides for a set of gravity factors which the judiciary takes into consideration in determining the seriousness of the offence and the applicable level of penalty.
- The [Conservation of Wild Birds \(Framework for Allowing a Derogation to Carry out Scientific Research on Seven Finch Species\) Regulations \(Subsidiary Legislation 549.145 of the Laws of Malta\)](#), hereafter referred to as the 'Framework Regulations' aim to establish a framework allowing a research derogation to determine Malta's reference population of the seven finch species enumerated in regulation 2 (defined as the "relevant species" for the purpose of these regulations) on the basis of Article 9(1)(b) of the Birds Directive, in particular read in conjunction with Article 10 and Annex V(c) of the

same Directive, and in terms of sub-regulation 9(1)(e) of the Conservation of Wild Birds Regulations.

- The Framework Regulations empower the Minister, after taking into consideration the recommendations of the Malta Ornithology Committee, to determine whether there is another satisfactory solution in terms of Article 9(1) of the Birds Directive. Moreover, proportionate to the envisaged purpose set out under sub-regulation 1(2), in particular in light of Article 9(2) of the Birds Directive, the Minister may declare a research period for the relevant species by means of a notice in the Government Gazette (Notice of Derogation). In 2022, this was issued on 19 October 2022 via the Conservation of Wild Birds (Declaration on a Derogation Allowing Scientific Research on Seven Finch Species in Autumn 2022) Regulations, 2022 ([Legal Notice 257 of 2022](#)). According to the Framework Regulations, a research period may only be opened for a maximum period of sixty-four (64) days in autumn. The Framework Regulations further provide the criteria for eligibility for a special licence for the capturing and handling of birds and set a procedure for the application stage, including, *inter alia*, mandatory examination, an application fee, and the special licence conditions. These Regulations also establish the means of capture, that is, by means of the clap-net system on sites that had been previously approved by the Wild Birds Regulation Unit and registered with the Commissioner of Police (on portable GIS tablets to facilitate spot-checks) and published on WBRU's website by not later than three days prior to the opening of the research period.

- The Framework Regulations stipulate a special licensing requirement and eligibility criteria, together with a set of binding special licence conditions, which include:
 - Possession of a valid general live-capturing licence or a valid bird ringing licence issued in terms of the Wild Birds Regulations.
 - Successful completion of a written examination process prepared for this purpose by the Wild Birds Regulation Unit, which tested the candidates' understanding of the rules set out for this

derogation, including capability of recording the required data on a ring recovery form.

- The dates and permitted hours of the research period.
- Provisions related to location and configuration of research sites and research stations.
- Restrictions pertaining to the use of only one research station containing not more than one pair of clap-nets from one hide, use of mesh size of not less than 18mm x 18mm and a maximum footprint of 38 square metres.
- Provisions related to authorised method of capture and requirement to remove or completely cover the nets before the licensee leaves the research station and during prohibited hours.
- Limiting possession and use of pre-recorded bird calls to finches only.
- Limitations concerning the use of live-decoys to birds from the relevant species fitted with a closed ring, to birds from the relevant species that were fitted with a single-use ring issued by the Wild Birds Regulation Unit in 2016 and 2017 (both bearing the same code), to their colour mutations (colour-variants) fitted with a seamless closed ring of the correct size for the species and to mules and/or hybrids. Colour mutations (colour variants) from the relevant species can only be used by the licensee as call birds ('għajjat') and not as fluttering decoys ('taħrik').
- Requirement to record the scientific ring identification numbers, details of the specimens and the site location from where it was captured, as specified on the ring recovery form issued by the Wild Birds Regulation Unit, after the specimens from the relevant species have been ringed or controlled, followed by the immediate release of all specimens from the same research station. The special licence also requires that the ring recovery form is returned to the Wild Birds Regulation Unit within the deadline as specified in a separate letter issued to the licensee following closure of the research period—non-compliance with this obligation would render the licensee automatically ineligible to apply for another special licence the following research period (if such period is declared).

- Requirement to keep relevant documentation, including approved site plans, General Licence (which also serves to identify the licensee) and Special Licence at all times whilst participating in the research activity or travelling to and from the research site.
- Restrictions pertaining to permitted size of cages in which birds can be kept during research activity, and other restrictions and prohibitions.

2.27 In addition to these conditions, licensees were also to abide with the provisions laid down in the Conservation of Wild Birds Regulations. Offences against any provision of the Special Licence are subject to penalties as set out in Regulation 27 of the Conservation of Wild Birds Regulations. Except where the offence consists solely of an administrative or minor violation listed in Schedule VIII of the said Regulations (which are pegged to a twelve-point penalty system), any other offences or breaches of licence conditions trigger automatic seizure of the special licence issued under these regulations and any equipment used for the research activity in violation of these regulations, prior to criminal proceedings being initiated in terms of Regulation 27. The Framework Regulations also provide that when a person is convicted by the Court for crimes related to this research derogation, that person shall be prohibited from applying for a new special licence issued under these regulations or under the Wild Birds Regulations.

2.28 The 2022 Notice of Derogation includes, *inter alia*, the Minister's declaration that there is no other satisfactory solution to the research project and established the dates of the research period for finches from 20 October 2022 to 20 December 2022, both dates included.

3. DISCUSSION WITHIN MALTA ORNIS COMMITTEE LEADING UP TO THE APPLICATION OF A RESEARCH DEROGATION IN 2022

3.1 The Malta Ornis Committee discussed the finches research derogation during its meeting held on 5 October 2022.⁷ During the meeting, the Committee noted the ongoing legal proceedings against Malta and recommended the application of a finches research derogation in autumn

⁷ Meeting of the Malta Ornis Committee held on 5 October 2022. Minutes available at: <https://mgoz.gov.mt/en/Pages/WBRU/Ornis-Committee.aspx>

2022 which was later announced by the Government of Malta under the terms set out in the Framework Regulations and Notice of Derogation.

4. ISSUANCE OF AUTUMN FINCHES RESEARCH LICENCES

- 4.1 Applications for a special finch research licence were received during a 6-day period between 29 August and 3 September 2022, inclusive of both dates. Only those applicants who were at the time of application already in possession of a valid general live-capturing licence for 2022 (5-year general licence card), passed the mandatory written examination and had returned the scientific ring recovery form following the closure of the 2021 research period were eligible to apply and following vetting, issued with a special licence. After these dates, applications were only accepted against a late payment fee as stipulated in Schedule X of Subsidiary Legislation 549.42.
- 4.2 Applicants were informed that their applications were provisional, and that the issuance of a special licence would be subject to the actual decision to apply the derogation.
- 4.3 To apply for a research licence, eligible persons were requested to submit a completed and signed application form, produce a valid general licence card for 2022 (which was to include a general live-capturing licence component) and provide the booklet stamped by an official hunting organisation. Each application was accepted against a licence fee of €25.
- 4.4 Applications for new general live-capturing licences were not accepted after 2014 and therefore no further examinations for this category of licence have conducted since.
- 4.5 A total of 3,110 individuals submitted an application for a special finch research licence (2,206 in Malta and 904 in Gozo). Of these, 1,080 persons (826 in Malta and 254 in Gozo) also applied to obtain a special licence to capture Golden Plover and Song Thrush under the terms of a separate Article 9(1)(c) derogation. No applications were submitted by licensed bird ringers.

- 4.6 Applications were screened against a database of criminal records and previous applications. As a result of this vetting exercise, an applicant was found to be ineligible.
- 4.7 The amount of finch research special licences issued throughout the research period stood at 3,109, of which 2,205 licences were issued to applicants residing in Malta and 904 to applicants residing in Gozo. This equates to 76.8% of all individuals in possession of a general live-capturing licence ($3,109 / 4,046_{(2022)} \times 100$)⁸. As outlined in the Section 2 of this report, the finches research licence (vide Annex I) set a number of conditions for the 2022 research activity, as provided in the Framework Regulations and the Notice of Derogation.
- 4.8 Following screening of the finches research sites by the Wild Birds Regulation Unit in accordance with the legal provisions set out in regulation 9 of the Framework Regulations, the coordinates indicating the exact location of all clap-nets eligible for the 2022 research project were provided to the Malta Police Force via portable PC tablets before the derogation period and published online within the statutory deadline.⁹
- 4.9 Licensees were only allowed to participate in the research project from a single clap-net pair (*mansab*), activated from a single hide (the research station). The total number of clap-net pairs for the 2022 finches research derogation stood at 2,660, registered on 3,109 licensees (Table 1). A total of 1,786 registered clap-net pairs were located in Malta whereas 874 clap-net pairs were located in Gozo. Out of these two totals, 1,497 clap-net pairs in Malta and 795 clap-net pairs in Gozo were exclusively used for the finches research programme. The other registered clap-net pairs (289 in Malta and 79 in Gozo) were used for both the finches research and for the Golden Plover and Song Thrush live-capturing derogation.

⁸ The total number of individuals in possession of a valid general live-capturing licence varies from one year to the other due to suspension of licences (termination or new), revocation of licences and mortality. Data on valid general licences per category per year is available at: <https://mgoz.gov.mt/en/Pages/WBRU/Reports-and-Statistics.aspx> under sub-heading "Game Reporting Data".

⁹ Registered clap-nets for 2022 finches research derogation. Available at: <https://mgoz.gov.mt/en/Documents/WBRU/autumn%20live%20capture/2022/finTraSitCoor2022.pdf>

TABLE 1 - REGISTERED FINCH RESEARCH STATIONS AND LICENSEES IN POSSESSION OF A SPECIAL LICENCE IN 2022

	<u>Clap-net pairs</u>	<u>Licensees</u>
Malta	1,786	2,205
Gozo	874	904
Total	2,660	3,109

5. RING RECOVERIES

5.1 Licensees were legally required to check if any of the finches they caught were fitted with a scientific ring (“controlled”) and to write down the ring details and the details of the specimen together with the date/location of capture on the scientific ring recovery form included with the special licence.

5.2 During the 2022 finches research period, finches were conspicuous by their absence, as confirmed by the independent finches migration study report (Annex II). Thus, the likelihood of finding a ring recovery was very low in 2022. Migration of finches over Malta varies considerably not only from one year to another but also during the same migration period with often marked differences in migratory influxes from one day to the next and from one area to another. This explains why during the 2022 research period, only one ring was recovered. The Wild Birds Regulation Unit forwarded the data to the National Ringing Scheme for cross-verification with the EURING database. Table 2 lists the ring recovery confirmed by EURING.

TABLE 2 – SCIENTIFIC RINGS RECOVERED IN 2022

Ring recovery			Species	Ring details			
Date	Time	Location		Ring Number	Country	Date when ringed	Age
30/10/2022	08:15	Hal Far, Żurrieq	Chaffinch	BIRDLIFE MALTA VALLETTA 421521	Malta	July 2022	Not reported

5.3 The specimen was reported by the national ringing scheme as an escapee, ringed at Għadira in July 2022. As detailed by the report ‘*The international*

impact of hunting and trapping in the Maltese islands,¹⁰ published by BirdLife Malta in 2007, between the 1920s and 2006, the number of finches recovered per species from other EU Member States was as follows: 53 Linnet, 9 Siskin, 16 Greenfinch, 16 Serin, 5 Chaffinch and 3 Goldfinch. In a later report¹¹ documenting ring recoveries over a ten-year study period (2008–2018), BirdLife Malta reported only 3 finches: 1 Greenfinch and 2 Siskin (all three ring recoveries were reported by live-capturers during the 2017 derogation period).

5.4 As evidenced by the published bird ringing data (Table 3) and as further pronounced by the Court of Justice of the European Union in Case C-557/15, the number of rings recovered in Malta is indeed small. In this regard, the number of finches successfully ‘controlled’ through this research derogation since 2020 (Table 3) confirms that through the use of the clap-net system and the involvement of citizens with vast expertise in the operation of such method, the current data gap can be effectively filled. The results obtained also confirm that the mist-net system used by bird-ringers is not a satisfactory solution for the collation of data to answer the research question: *where do finches that migrate over Malta during post-nuptial (autumn) migration come from?* Finch ring recoveries using the mist-net system obtained far fewer results over a much longer period.

Table 3 - rings recovered by licensees through the research derogation and confirmed by euring in 2020, 2021 and 2022 (F=Foreign rings; L=Local Rings).

Year	Linnet		Siskin		Greenfinch		Serin		Chaffinch		Goldfinch		Hawfinch	
	F	L	F	L	F	L	F	L	F	L	F	L	F	L
2020	4	0	1	0	0	0	1	0	0	1	0	0	0	0
2021	0	1	8	4	1	0	0	0	0	0	0	0	0	1
2022	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Totals	4	1	9	4	1	0	1	0	0	2	0	0	0	1

5.5 Considering that the Court of Justice of the European Union, in case C-557/15, declared that 53 ring recoveries for Linnet do not provide scientific

¹⁰ The international impact of hunting and trapping in the Maltese islands, BirdLife Malta, 2007. Available at: https://birdlifemalta.org/wp-content/uploads/2016/08/BLM-Report_The-international-impact-of-hunting-and-trapping-in-the-Maltese-Islands.pdf

¹¹ Birdlife Malta ring recoveries 2008-2018 report. Available at: <https://mgoz.gov.mt/en/Documents/WBRU/Reports%20and%20Statistics/ringRecov0818.pdf>

certainty on the reference population of this species, and notwithstanding the fact that the Court did not pronounce itself on what constitutes sufficient data on ring recoveries with which the 'small numbers' requirement pegged to Article 9(1)(c) derogations can be assessed, it follows that for all the seven finch species, scientific certainty can only be obtained if the total number of ring recoveries from other EU Member States exceeds 53 per species.

- 5.6 Taking into material account the variables associated with the sampling framework and sample size, in particular, the factors that affect the migratory behaviour of finches as well as ringing effort in their countries of origin, the Maltese authorities believe that scientific certainty can be achieved when the sample size is in the region of 70 ring recoveries for each species *if and only if* additional ring recoveries beyond the 60 threshold do not provide insight into new regions not previously recorded. In other words, data saturation may be reached at a threshold of 60 ring recoveries per species. The additional 15 foreign ring recoveries recorded during the 2020 (n=6) and 2021 (n=9) research periods are still deemed insufficient in this regard. Thus, in line with the Court judgment, additional ring recoveries are still required before scientific certainty on the countries of origin of the seven finch species during their post-nuptial migration over Malta can be obtained.

6. ACTIVITY DATA (RESEARCH EFFORT)

- 6.1 Licensees were legally required to report their research effort through the telephonic reporting system or mobile app, every time they were active at the research sites even if they did not record any finches on that day.
- 6.2 Data on research effort shows that out of a total of 3,109 finches research licence holders, the maximum number of licensees active *concurrently* on any given day of the research period was in the region of 130. This does not imply that only 130 licensees reported research effort throughout the derogation period but that, whilst not all licence holders participated in the finches research study, the majority were active at some point on any given day—research effort was reported by the majority of licence holders on different days of the research period, not by 130 licensees only. Thus, notwithstanding that 3,109 licences were issued, not all licensees were participating in the research concurrently on each day of the research period.

This is also corroborated by enforcement data since no individuals were apprehended for not reporting research effort (see Section 9 on enforcement and strict supervision). Considering the level of enforcement deployment and total number of spot-checks within each region, it is highly improbable that a licensee who failed to report research effort went undetected. Considering that out of a total of 3,109 licensees, only a maximum of 130 were active on any given day of the season, the ratio of daily enforcement deployment to active licensees was even higher. The likelihood that nonreporting went undetected is thus very slim.

6.3 Figure 1 shows the number of licensees participating in the finches research concurrently during the 2022 research period.

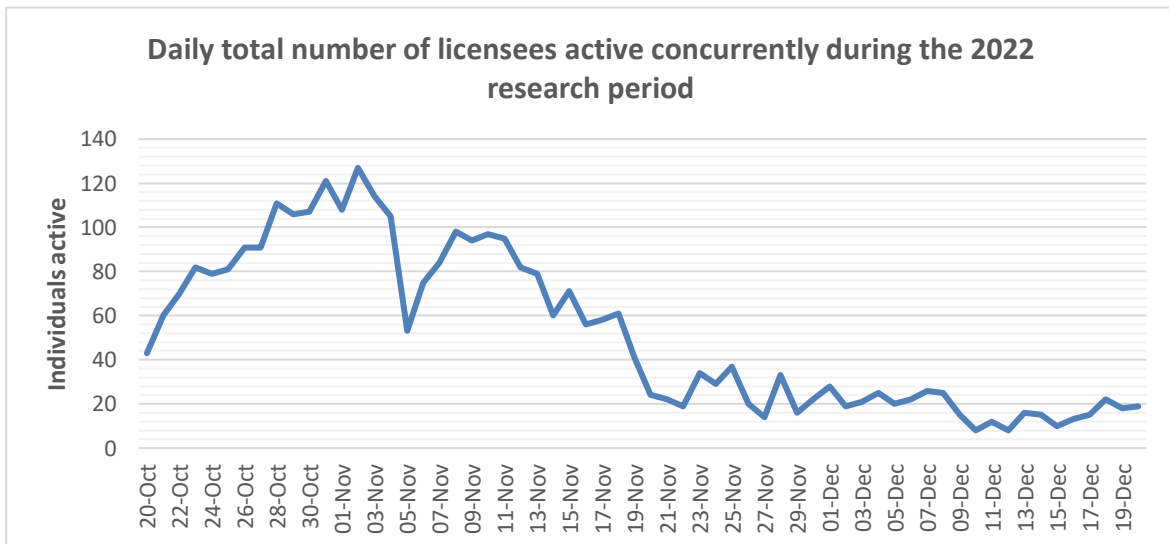


FIGURE 1 - DAILY TOTAL NUMBER OF LICENSEES ACTIVE DURING THE 2022 RESEARCH PERIOD

6.4 Licensees were also legally required to report any finch that was caught and released, regardless of whether it had a scientific ring or not. Figure 2 shows the total amount of finches reported per species throughout the research period.

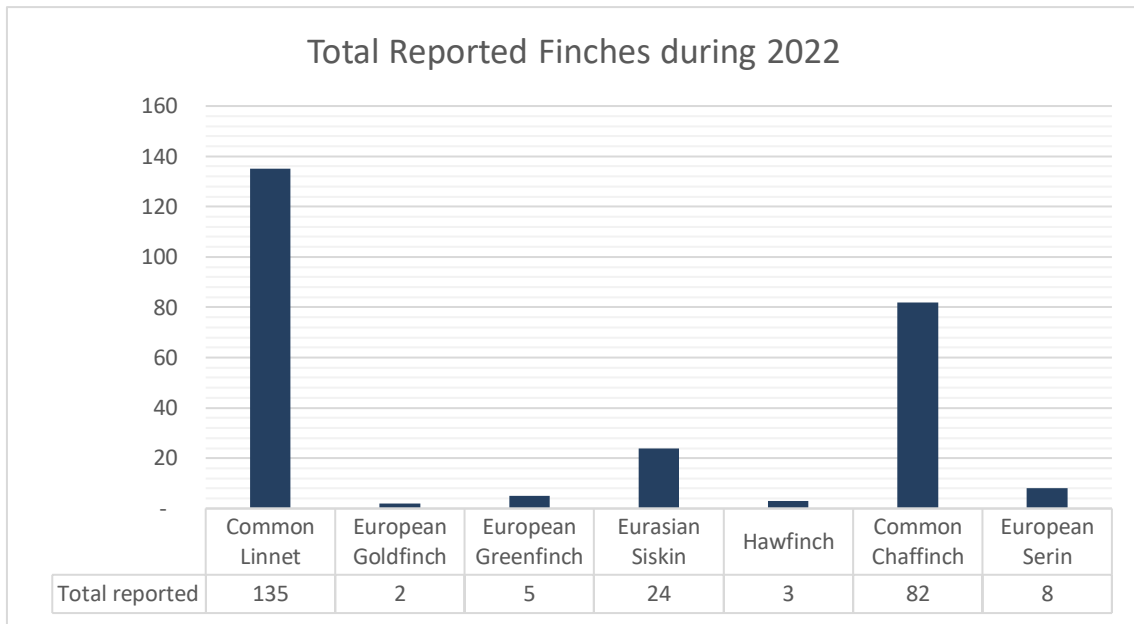


FIGURE 2 - TOTAL NUMBER OF FINCHES REPORTED IN 2022 PER SPECIES

7. FINCHES MIGRATION STUDY

7.1 An independent scientific study was carried out between 15 October 2022 and 15 January 2023, inclusive of both dates, to obtain an estimate of migratory patterns of the seven finch species during the research derogation period. The study, carried out by Ecoserv Ltd., was commissioned by the Wild Birds Regulation Unit, with its overall objective to assess the influx or passage of the seven finch species during the three-month migration study period.

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

- Daily datasheets with raw counts for each of the seven finch species; and
- A monitoring report for autumn/winter 2022 finch migration season, which includes:
 - List of monitoring stations which recorded high/low counts;
 - Dates which showed high/low peaks in the migration of each of the seven finch species;

- A daily estimate of the influx of each of the seven finch species for the whole of the Maltese Islands;
- The estimated total influx for these species for the whole of the study period, subject to scientifically justified assumption;
- A comparison of the influxes recorded during the past studies; and
- The correlation of migration data gathered with the research derogation data for the seven finch species.

7.3 The geographical scope of the study extended across the three inhabited islands of the Maltese archipelago (Malta, Gozo and Comino), with data gathered during a three-month period from 15 October 2022 until 15 January 2023. Given that the study was mainly intended to quantify the influx/passage 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 II, with key conclusions summarised below.

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

7.5 Each group of six sites was surveyed once every four days, such that a total of 21 sites were surveyed in total over each period of four days. The study site at Comino was included in the six sites surveyed on any one day, such that this site was surveyed daily. However, when sea transport services to Comino were unavailable due to inclement weather, count surveys were undertaken at an alternative site instead. Counts obtained across this network of observation stations over the survey period are given in the following table.

7.6 Since the survey was mainly aimed at quantifying the influx/passage of migrating individuals, field sites were sited at strategic locations along coastal areas. The location of the sites is shown in Figure 3 below.

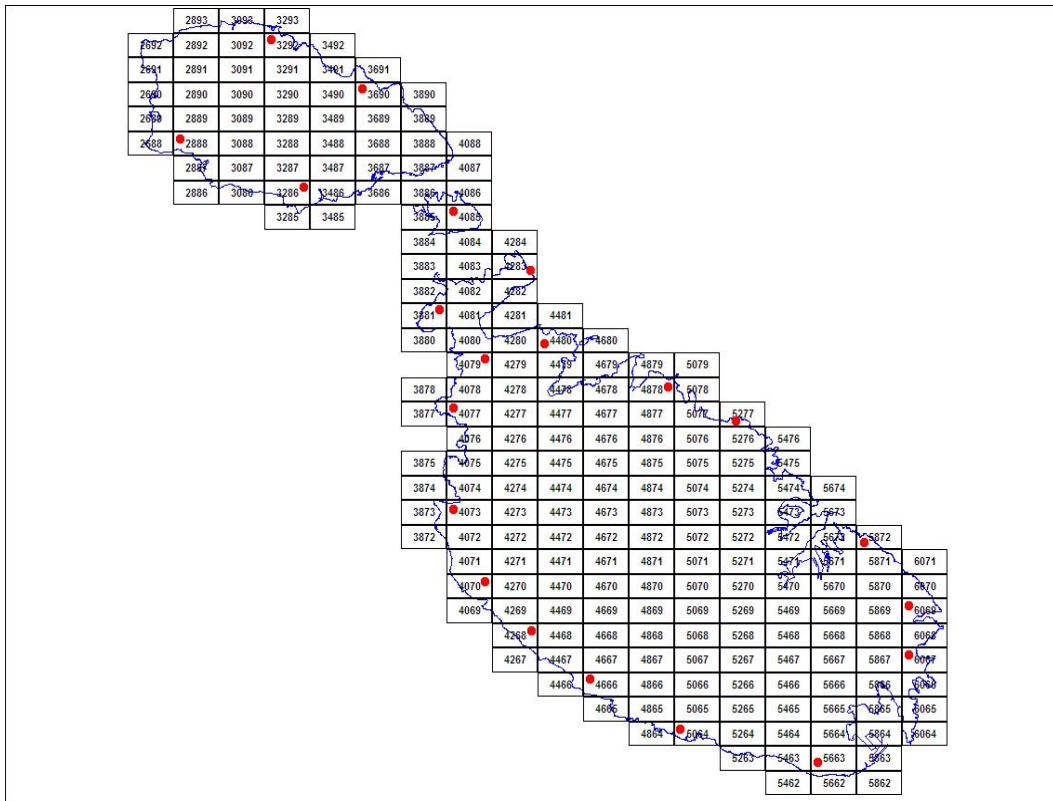


FIGURE 3 - LOCATION OF MONITORING SITES

7.7 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 based on 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.

7.8 Monitoring for finches was carried out between 09:00 and 14:00 during the first ten 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. At each study site, the observers also recorded the prevalent weather conditions, namely wind direction and strength, and degree of cloud cover.

- 7.9 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 (15 October 2022 to 15 January 2023). 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.
- 7.10 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 2022 study; (b) the relatively small number of sites used; and (c) the counts were not made daily at each site. 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.
- 7.11 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 2022 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 (and during the night); hence individuals migrating during this time would not be detected during the survey. One should also

note that finch migration extends beyond the surveyed period, given that autumn/winter migration starts from mid-September onwards and trails off by the end of January. Such finches would not have been included in the 2022 survey.

- 7.12 Since the coastal length surveyed at each site during the 2022 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)¹²; 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 finch species.
- 7.13 Raw daily counts for **Common Linnet** recorded from the 21 sites during the 2022 study varied between 0 and a maximum of 26, while the mean daily counts ranged between 0 and 4.33 (Table 4). During the 2022 autumn migration, relatively high counts for this species were recorded on some days between 29 October and 25 November 2022. The total counts, i.e. the total number of Linnet individuals recorded from a given grid location (= study site) during the whole study period (93 days), varied appreciably between the different sites: at the lower end, no individuals were recorded from the sites at grid locations 4666 and 6069, while at the higher end, 38 Linnet individuals were recorded from the site at grid location 4070 (which was surveyed daily), and 33 individuals were recorded from the site at grid location 2888.
- 7.14 An estimate of total influx of Common Linnet over the Maltese Islands is given below. Extrapolation translates to an estimated daily influx ranging between 0 and 2,351 individuals, with a total influx over the survey period (15 October 2022 – 15 January 2023; i.e., 93 days) of 22,075 individuals, i.e., 237 birds per day.

¹² Note, however, that this estimate includes the perimeter of minor islets and rocks.

TABLE 4 - VALUES OF MEAN (\pm SD) DAILY COUNT AND DAILY TOTAL COUNT RECORDED FROM THE SIX STUDY SITES, TOGETHER WITH TOTAL INFLUX OF MIGRATORY COMMON LINNET

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
15-Oct-22	0.00	\pm 0.00	0	0
16-Oct-22	0.17	\pm 0.41	1	90
17-Oct-22	0.00	\pm 0.00	0	0
18-Oct-22	0.50	\pm 0.84	3	271
19-Oct-22	0.33	\pm 0.82	2	181
20-Oct-22	1.00	\pm 1.26	6	542
21-Oct-22	0.67	\pm 1.63	4	362
22-Oct-22	0.33	\pm 0.82	2	181
23-Oct-22	0.17	\pm 0.41	1	90
24-Oct-22	1.17	\pm 1.33	7	633
25-Oct-22	0.67	\pm 1.21	4	362
26-Oct-22	0.67	\pm 1.03	4	362
27-Oct-22	0.83	\pm 1.33	5	452
28-Oct-22	1.17	\pm 2.40	7	633
29-Oct-22	4.33	\pm 9.18	26	2351
30-Oct-22	0.67	\pm 1.21	4	362
31-Oct-22	0.33	\pm 0.82	2	181
01-Nov-22	3.00	\pm 2.68	18	1627
02-Nov-22	1.20	\pm 2.68	6	651
03-Nov-22	1.67	\pm 1.37	10	904
04-Nov-22	0.00	\pm 0.00	0	0
05-Nov-22	0.17	\pm 0.41	1	90
06-Nov-22	0.33	\pm 0.52	2	181
07-Nov-22	0.17	\pm 0.41	1	90
08-Nov-22	1.00	\pm 1.26	6	542
09-Nov-22	1.67	\pm 2.34	10	904
10-Nov-22	0.17	\pm 0.41	1	90
11-Nov-22	1.33	\pm 1.75	8	723
12-Nov-22	0.67	\pm 1.21	4	362
13-Nov-22	0.67	\pm 1.21	4	362
14-Nov-22	0.00	\pm 0.00	0	0
15-Nov-22	2.00	\pm 4.00	12	1085
16-Nov-22	0.83	\pm 0.98	5	452
17-Nov-22	0.50	\pm 1.22	3	271
18-Nov-22	0.00	\pm 0.00	0	0
19-Nov-22	0.00	\pm 0.00	0	0
20-Nov-22	0.00	\pm 0.00	0	0
21-Nov-22	0.00	\pm 0.00	0	0
22-Nov-22	0.00	\pm 0.00	0	0
23-Nov-22	0.33	\pm 0.82	2	181
24-Nov-22	1.17	\pm 1.60	7	633
25-Nov-22	1.83	\pm 2.14	11	994
26-Nov-22	0.00	\pm 0.00	0	0
27-Nov-22	0.00	\pm 0.00	0	0
28-Nov-22	0.33	\pm 0.82	2	181
29-Nov-22	0.00	\pm 0.00	0	0
30-Nov-22	0.00	\pm 0.00	0	0
01-Dec-22	0.50	\pm 1.22	3	271
02-Dec-22	0.00	\pm 0.00	0	0
03-Dec-22	0.50	\pm 1.22	3	271

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
04-Dec-22	1.00	± 1.26	6	542
05-Dec-22	0.50	± 0.84	3	271
06-Dec-22	0.33	± 0.82	2	181
07-Dec-22	1.17	± 2.04	7	633
08-Dec-22	0.00	± 0.00	0	0
09-Dec-22	0.67	± 1.63	4	362
10-Dec-22	0.00	± 0.00	0	0
11-Dec-22	0.00	± 0.00	0	0
12-Dec-22	0.00	± 0.00	0	0
13-Dec-22	0.00	± 0.00	0	0
14-Dec-22	0.00	± 0.00	0	0
15-Dec-22	0.50	± 1.22	3	271
16-Dec-22	0.17	± 0.41	1	90
17-Dec-22	0.00	± 0.00	0	0
18-Dec-22	0.50	± 1.22	3	271
19-Dec-22	0.00	± 0.00	0	0
20-Dec-22	0.00	± 0.00	0	0
21-Dec-22	0.17	± 0.41	1	90
22-Dec-22	0.83	± 1.33	5	452
23-Dec-22	0.00	± 0.00	0	0
24-Dec-22	0.00	± 0.00	0	0
25-Dec-22	0.67	± 1.63	4	362
26-Dec-22	0.33	± 0.82	2	181
27-Dec-22	0.00	± 0.00	0	0
28-Dec-22	0.33	± 0.82	2	181
29-Dec-22	0.00	± 0.00	0	0
30-Dec-22	0.17	± 0.41	1	90
31-Dec-22	0.00	± 0.00	0	0
01-Jan-23	0.00	± 0.00	0	0
02-Jan-23	0.00	± 0.00	0	0
03-Jan-23	0.00	± 0.00	0	0
04-Jan-23	0.00	± 0.00	0	0
05-Jan-23	0.00	± 0.00	0	0
06-Jan-23	0.17	± 0.41	1	90
07-Jan-23	0.00	± 0.00	0	0
08-Jan-23	0.00	± 0.00	0	0
09-Jan-23	0.00	± 0.00	0	0
10-Jan-23	0.17	± 0.41	1	90
11-Jan-23	0.00	± 0.00	0	0
12-Jan-23	0.00	± 0.00	0	0
13-Jan-23	0.00	± 0.00	0	0
14-Jan-23	0.00	± 0.00	0	0
15-Jan-23	0.00	± 0.00	0	0
Total Count / Estimated Influx			243	22,075

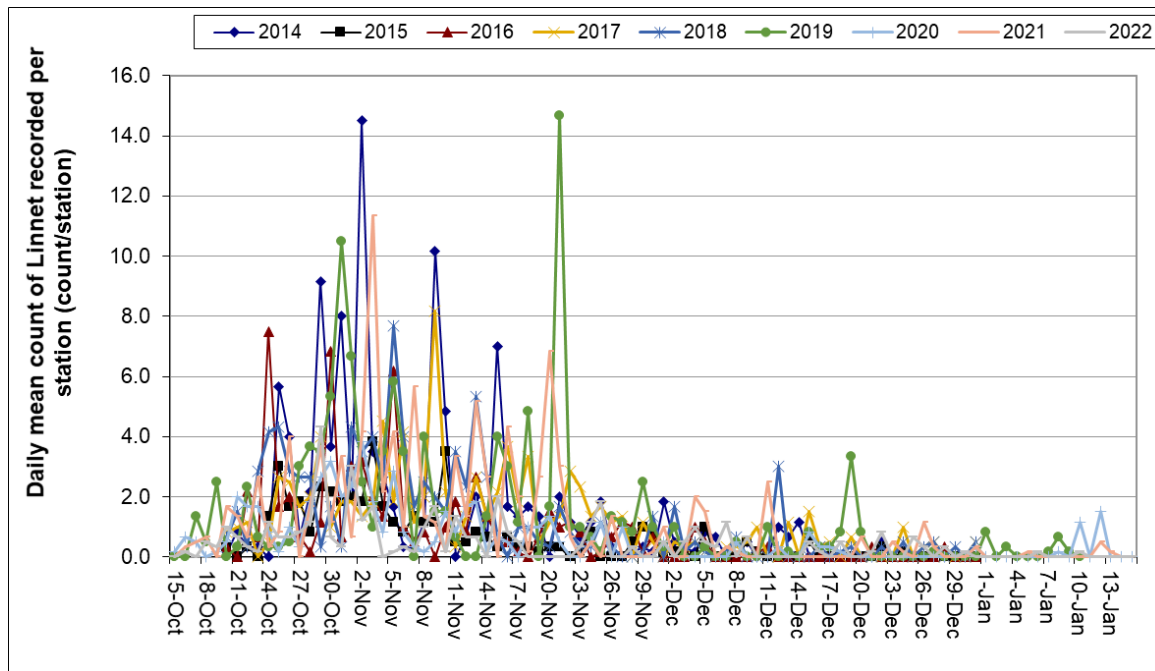


FIGURE 4 - DAILY MEAN COUNTS OF COMMON LINNET PER STATION (= SITE) RECORDED BETWEEN 15 OCTOBER AND 15 JANUARY DURING THE 2022, 2021 AND 2020 SURVEYS, BETWEEN 15 OCTOBER 2019 AND 10 JANUARY 2020 DURING THE 2019 SURVEY, AND BETWEEN 20 OCTOBER AND 31 DECEMBER DURING PREVIOUS (2014, 2015, 2016, 2017, 2018) SURVEYS.

7.15 Raw daily counts for **Common Chaffinch** recorded from the 21 sites during the 2022 study varied between 0 and a maximum of 15, while the mean daily counts ranged between 0 and 2.5 (Table 5). Slightly higher counts for this species were recorded on some days between 30 October and 28 November. The total counts, i.e. the total number of Chaffinch individuals recorded from a given grid location (= study site) during the whole study period (93 days), varied appreciably between the different sites: at the lower end, no individuals were recorded throughout the survey period from the site at grid location 4666, while at the higher end 53 Chaffinch individuals were recorded from the site at grid location 4085 (which was surveyed daily) and 31 individuals were recorded from the site at grid location 3292.

7.16 An estimate of total influx of Common Chaffinch over the Maltese Islands is given in Table 5 below. Based on the mean daily counts (Table 5), extrapolation translates to an estimated daily influx ranging between 0 and 1,356 individuals, with a total influx over the survey period (15 October 2022 – 15 January 2023; i.e. 93 days) of 26,575 individuals, that is, 286 birds per day.

TABLE 5 - VALUES OF MEAN (\pm SD) DAILY COUNT AND DAILY TOTAL COUNT RECORDED FROM THE SIX STUDY SITES, TOGETHER WITH TOTAL INFLUX OF MIGRATORY COMMON CHAFFINCH

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
15-Oct-22	0.00	\pm 0.00	0	0
16-Oct-22	1.17	\pm 1.83	7	633
17-Oct-22	0.50	\pm 1.22	3	271
18-Oct-22	0.67	\pm 1.21	4	362
19-Oct-22	0.67	\pm 0.82	4	362
20-Oct-22	1.00	\pm 1.10	6	542
21-Oct-22	0.33	\pm 0.82	2	181
22-Oct-22	0.83	\pm 0.75	5	452
23-Oct-22	0.50	\pm 1.22	3	271
24-Oct-22	0.33	\pm 0.82	2	181
25-Oct-22	0.33	\pm 0.82	2	181
26-Oct-22	0.83	\pm 2.04	5	452
27-Oct-22	1.17	\pm 1.94	7	633
28-Oct-22	1.33	\pm 1.75	8	723
29-Oct-22	1.17	\pm 1.60	7	633
30-Oct-22	2.00	\pm 0.89	12	1085
31-Oct-22	0.67	\pm 0.82	4	362
01-Nov-22	2.50	\pm 2.35	15	1356
02-Nov-22	0.17	\pm 0.41	1	90
03-Nov-22	0.83	\pm 1.33	5	452
04-Nov-22	0.50	\pm 0.84	3	271
05-Nov-22	0.17	\pm 0.41	1	90
06-Nov-22	1.00	\pm 1.55	6	542
07-Nov-22	0.33	\pm 0.82	2	181
08-Nov-22	2.50	\pm 1.22	15	1356
09-Nov-22	1.83	\pm 1.94	11	994
10-Nov-22	0.67	\pm 1.03	4	362
11-Nov-22	0.83	\pm 1.33	5	452
12-Nov-22	1.50	\pm 2.07	9	814
13-Nov-22	0.33	\pm 0.82	2	181
14-Nov-22	0.50	\pm 0.84	3	271
15-Nov-22	0.00	\pm 0.00	0	0
16-Nov-22	0.50	\pm 0.84	3	271
17-Nov-22	1.50	\pm 1.52	9	814
18-Nov-22	0.83	\pm 1.33	5	452
19-Nov-22	0.00	\pm 0.00	0	0
20-Nov-22	0.50	\pm 1.22	3	271
21-Nov-22	0.00	\pm 0.00	0	0
22-Nov-22	0.00	\pm 0.00	0	0
23-Nov-22	0.00	\pm 0.00	0	0
24-Nov-22	0.33	\pm 0.82	2	181
25-Nov-22	1.17	\pm 1.33	7	633
26-Nov-22	1.50	\pm 2.35	9	814
27-Nov-22	0.00	\pm 0.00	0	0
28-Nov-22	1.83	\pm 2.40	11	994
29-Nov-22	0.17	\pm 0.41	1	90
30-Nov-22	0.17	\pm 0.41	1	90
01-Dec-22	0.83	\pm 1.60	5	452
02-Dec-22	0.83	\pm 1.33	5	452
03-Dec-22	0.00	\pm 0.00	0	0

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
04-Dec-22	1.17	± 1.83	7	633
05-Dec-22	0.17	± 0.41	1	90
06-Dec-22	0.50	± 0.84	3	271
07-Dec-22	1.00	± 2.00	6	542
08-Dec-22	0.33	± 0.52	2	181
09-Dec-22	0.50	± 1.22	3	271
10-Dec-22	0.17	± 0.41	1	90
11-Dec-22	0.33	± 0.82	2	181
12-Dec-22	0.00	± 0.00	0	0
13-Dec-22	0.17	± 0.41	1	90
14-Dec-22	0.50	± 0.84	3	271
15-Dec-22	0.50	± 1.22	3	271
16-Dec-22	0.00	± 0.00	0	0
17-Dec-22	0.50	± 1.22	3	271
18-Dec-22	0.50	± 0.84	3	271
19-Dec-22	0.67	± 0.82	4	362
20-Dec-22	0.00	± 0.00	0	0
21-Dec-22	0.33	± 0.82	2	181
22-Dec-22	0.33	± 0.52	2	181
23-Dec-22	0.33	± 0.82	2	181
24-Dec-22	0.17	± 0.41	1	90
25-Dec-22	0.50	± 1.22	3	271
26-Dec-22	0.50	± 0.84	3	271
27-Dec-22	0.33	± 0.82	2	181
28-Dec-22	0.00	± 0.00	0	0
29-Dec-22	0.33	± 0.82	2	181
30-Dec-22	0.50	± 1.22	3	271
31-Dec-22	0.17	± 0.41	1	90
01-Jan-23	0.33	± 0.82	2	181
02-Jan-23	0.17	± 0.41	1	90
03-Jan-23	0.00	± 0.00	0	0
04-Jan-23	0.00	± 0.00	0	0
05-Jan-23	0.00	± 0.00	0	0
06-Jan-23	0.00	± 0.00	0	0
07-Jan-23	0.17	± 0.41	1	90
08-Jan-23	0.33	± 0.82	2	181
09-Jan-23	0.00	± 0.00	0	0
10-Jan-23	0.00	± 0.00	0	0
11-Jan-23	0.00	± 0.00	0	0
12-Jan-23	0.17	± 0.41	1	90
13-Jan-23	0.00	± 0.00	0	0
14-Jan-23	0.00	± 0.00	0	0
15-Jan-23	0.00	± 0.00	0	0
Total Count / Estimated Influx			294	26,575

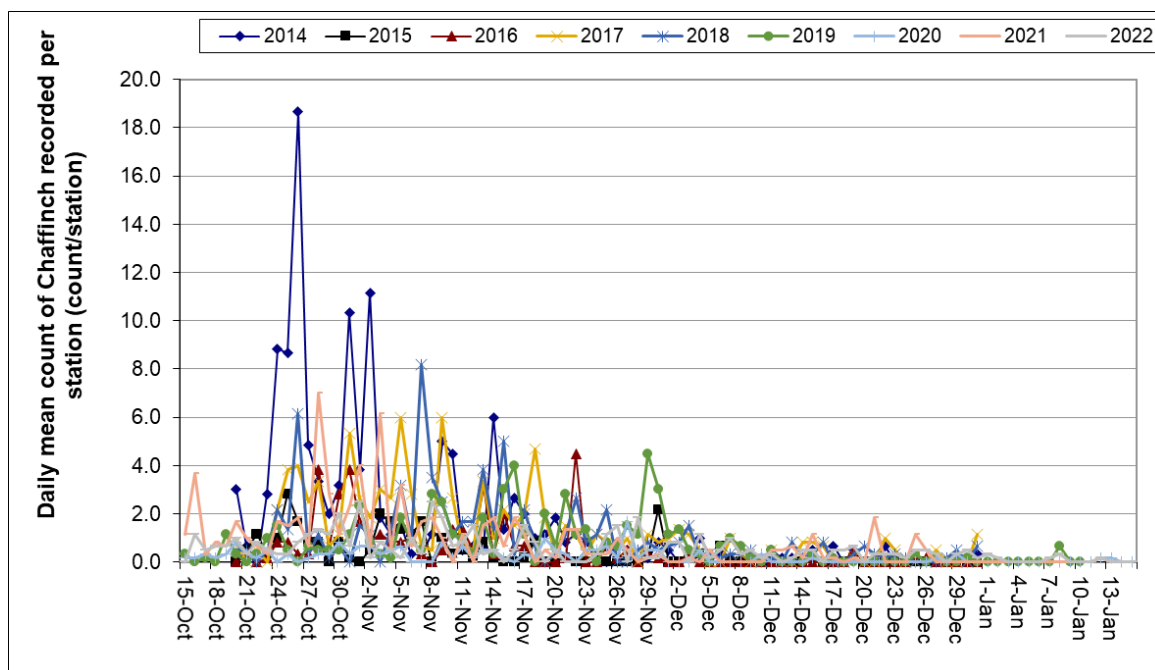


FIGURE 5– DAILY MEAN COUNTS OF COMMON CHAFFINCH PER STATION (= SITE) RECORDED BETWEEN 15 OCTOBER AND 15 JANUARY DURING THE 2022, 2021 AND 2020 SURVEYS, BETWEEN 15 OCTOBER 2019 AND 10 JANUARY 2020 DURING THE 2019 SURVEY, AND BETWEEN 20 OCTOBER AND 31 DECEMBER DURING PREVIOUS (2014, 2015, 2016, 2017, 2018) SURVEYS.

7.17 Raw daily counts for **European Greenfinch** recorded from the 21 sites during the 2022 study varied between 0 and a maximum of 5, while the mean daily counts ranged between 0 and 0.83 (Table 6). Zero counts for this species were recorded throughout most of the survey period, with counts recorded in only seven days between 15 October and 8 January. The total counts, i.e. the total number of Greenfinch individuals recorded from a given grid location (= study site) during the whole study period (93 days), did not vary appreciably between the different sites: at the higher end, 5 Greenfinch individuals were recorded throughout the survey period from the site at grid location 5663, while at the lower end no Greenfinch individuals were recorded from a total of 15 different sites.

7.18 The estimated total influx of European Greenfinch over the Maltese Islands is given in Table 6. Based on the mean daily counts (Table 6), extrapolation translates to an estimated daily influx ranging between 0 and 452 individuals, with a total influx over the survey period (15 October 2022 – 15 January 2023; i.e. 93 days) of 1,265 individuals; that is some 14 birds per day.

TABLE 6 - VALUES OF MEAN (\pm SD) DAILY COUNT AND DAILY TOTAL COUNT RECORDED FROM THE SIX STUDY SITES, TOGETHER WITH TOTAL INFLUX OF MIGRATORY EUROPEAN GREENFINCH

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
15-Oct-22	0.83	± 2.04	5	452
16-Oct-22	0.00	± 0.00	0	0
17-Oct-22	0.00	± 0.00	0	0
18-Oct-22	0.00	± 0.00	0	0
19-Oct-22	0.00	± 0.00	0	0
20-Oct-22	0.00	± 0.00	0	0
21-Oct-22	0.00	± 0.00	0	0
22-Oct-22	0.00	± 0.00	0	0
23-Oct-22	0.00	± 0.00	0	0
24-Oct-22	0.00	± 0.00	0	0
25-Oct-22	0.00	± 0.00	0	0
26-Oct-22	0.00	± 0.00	0	0
27-Oct-22	0.00	± 0.00	0	0
28-Oct-22	0.00	± 0.00	0	0
29-Oct-22	0.00	± 0.00	0	0
30-Oct-22	0.00	± 0.00	0	0
31-Oct-22	0.00	± 0.00	0	0
01-Nov-22	0.00	± 0.00	0	0
02-Nov-22	0.00	± 0.00	0	0
03-Nov-22	0.00	± 0.00	0	0
04-Nov-22	0.00	± 0.00	0	0
05-Nov-22	0.00	± 0.00	0	0
06-Nov-22	0.00	± 0.00	0	0
07-Nov-22	0.00	± 0.00	0	0
08-Nov-22	0.00	± 0.00	0	0
09-Nov-22	0.00	± 0.00	0	0
10-Nov-22	0.00	± 0.00	0	0
11-Nov-22	0.17	± 0.41	1	90
12-Nov-22	0.00	± 0.00	0	0
13-Nov-22	0.00	± 0.00	0	0
14-Nov-22	0.00	± 0.00	0	0
15-Nov-22	0.00	± 0.00	0	0
16-Nov-22	0.00	± 0.00	0	0
17-Nov-22	0.00	± 0.00	0	0
18-Nov-22	0.00	± 0.00	0	0
19-Nov-22	0.00	± 0.00	0	0
20-Nov-22	0.00	± 0.00	0	0
21-Nov-22	0.00	± 0.00	0	0
22-Nov-22	0.00	± 0.00	0	0
23-Nov-22	0.00	± 0.00	0	0
24-Nov-22	0.00	± 0.00	0	0
25-Nov-22	0.00	± 0.00	0	0
26-Nov-22	0.00	± 0.00	0	0
27-Nov-22	0.00	± 0.00	0	0
28-Nov-22	0.00	± 0.00	0	0
29-Nov-22	0.33	± 0.82	2	181
30-Nov-22	0.00	± 0.00	0	0
01-Dec-22	0.00	± 0.00	0	0
02-Dec-22	0.00	± 0.00	0	0

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
03-Dec-22	0.00	± 0.00	0	0
04-Dec-22	0.00	± 0.00	0	0
05-Dec-22	0.00	± 0.00	0	0
06-Dec-22	0.00	± 0.00	0	0
07-Dec-22	0.00	± 0.00	0	0
08-Dec-22	0.00	± 0.00	0	0
09-Dec-22	0.00	± 0.00	0	0
10-Dec-22	0.00	± 0.00	0	0
11-Dec-22	0.00	± 0.00	0	0
12-Dec-22	0.00	± 0.00	0	0
13-Dec-22	0.00	± 0.00	0	0
14-Dec-22	0.00	± 0.00	0	0
15-Dec-22	0.00	± 0.00	0	0
16-Dec-22	0.33	± 0.82	2	181
17-Dec-22	0.00	± 0.00	0	0
18-Dec-22	0.00	± 0.00	0	0
19-Dec-22	0.00	± 0.00	0	0
20-Dec-22	0.00	± 0.00	0	0
21-Dec-22	0.33	± 0.82	2	181
22-Dec-22	0.17	± 0.41	1	90
23-Dec-22	0.00	± 0.00	0	0
24-Dec-22	0.00	± 0.00	0	0
25-Dec-22	0.00	± 0.00	0	0
26-Dec-22	0.00	± 0.00	0	0
27-Dec-22	0.00	± 0.00	0	0
28-Dec-22	0.00	± 0.00	0	0
29-Dec-22	0.00	± 0.00	0	0
30-Dec-22	0.00	± 0.00	0	0
31-Dec-22	0.00	± 0.00	0	0
01-Jan-23	0.00	± 0.00	0	0
02-Jan-23	0.00	± 0.00	0	0
03-Jan-23	0.00	± 0.00	0	0
04-Jan-23	0.00	± 0.00	0	0
05-Jan-23	0.00	± 0.00	0	0
06-Jan-23	0.00	± 0.00	0	0
07-Jan-23	0.00	± 0.00	0	0
08-Jan-23	0.17	± 0.41	1	90
09-Jan-23	0.00	± 0.00	0	0
10-Jan-23	0.00	± 0.00	0	0
11-Jan-23	0.00	± 0.00	0	0
12-Jan-23	0.00	± 0.00	0	0
13-Jan-23	0.00	± 0.00	0	0
14-Jan-23	0.00	± 0.00	0	0
15-Jan-23	0.00	± 0.00	0	0
Total Count / Estimated Influx			14	1,265

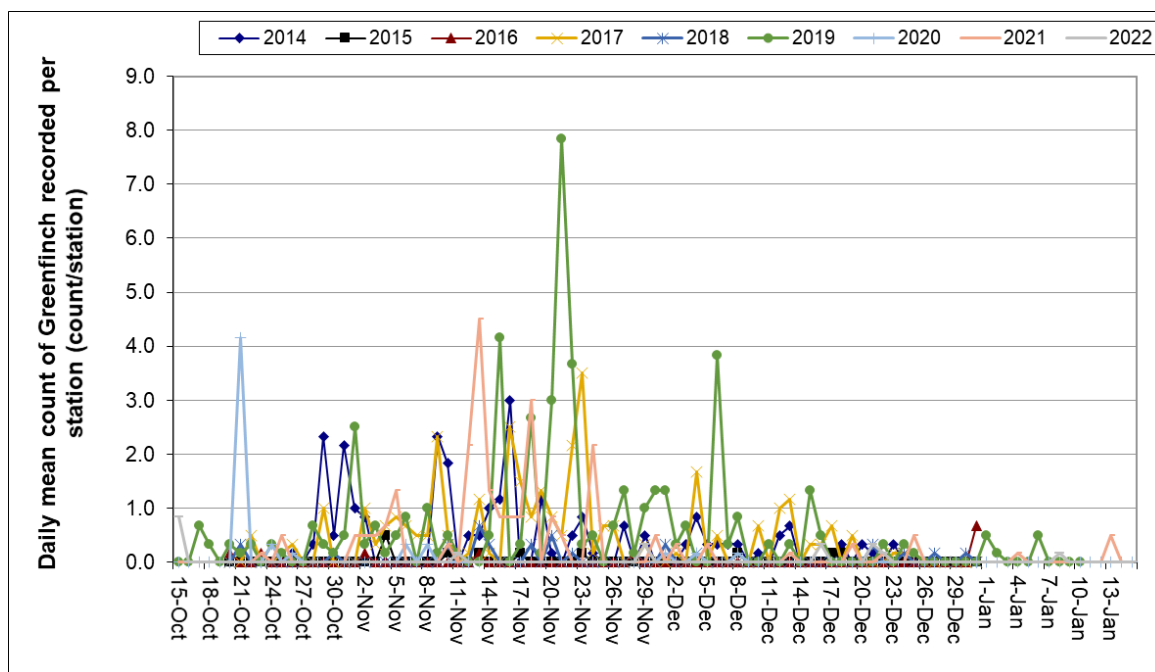


FIGURE 6 – DAILY MEAN COUNTS OF EUROPEAN GREENFINCH PER STATION (= SITE) RECORDED BETWEEN 15 OCTOBER AND 15 JANUARY DURING THE 2022, 2021 AND 2020 SURVEYS, BETWEEN 15 OCTOBER 2019 AND 10 JANUARY 2020 DURING THE 2019 SURVEY, AND BETWEEN 20 OCTOBER AND 31 DECEMBER DURING PREVIOUS (2014, 2015, 2016, 2017, 2018) SURVEYS.

- 7.19 Raw daily counts for **Eurasian Siskin** recorded from the 21 sites during the 2022 study varied between 0 and a maximum of 11, while the mean daily counts ranged between 0 and 1.83 (Table 7). Counts for this species were more frequent between 17 October and 3 December, with most subsequent days characterised by zero counts. The total counts, i.e. the total number of Siskin individuals recorded from a given grid location (= study site) during the whole study period (93 days), did not vary appreciably between the different sites: at the lower end, no Siskin individuals were recorded from eight study sites, while at the higher end 25 Siskin individuals were recorded from the site at grid location 4085 (which was surveyed daily), followed by six individuals recorded from the site at grid location 4077.
- 7.20 The estimated total influx of Eurasian Siskin over the Maltese Islands is given in Table 7. Based on the mean daily counts (Table 7), extrapolation translates to an estimated daily influx ranging between 0 and 994 individuals, with a total influx over the survey period (15 October 2022 – 15 January 2023; i.e. 93 days) of 5,238 individuals; that is some 56 birds per day.

TABLE 7 - VALUES OF MEAN (\pm SD) DAILY COUNT AND DAILY TOTAL COUNT RECORDED FROM THE SIX STUDY SITES, TOGETHER WITH TOTAL INFLUX OF MIGRATORY EURASIAN SISKIN

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
15-Oct-22	0.00	\pm 0.00	0	0
16-Oct-22	0.17	\pm 0.41	1	90
17-Oct-22	0.50	\pm 1.22	3	271
18-Oct-22	0.17	\pm 0.41	1	90
19-Oct-22	0.33	\pm 0.82	2	181
20-Oct-22	0.00	\pm 0.00	0	0
21-Oct-22	0.00	\pm 0.00	0	0
22-Oct-22	0.00	\pm 0.00	0	0
23-Oct-22	0.17	\pm 0.41	1	90
24-Oct-22	0.00	\pm 0.00	0	0
25-Oct-22	0.00	\pm 0.00	0	0
26-Oct-22	0.00	\pm 0.00	0	0
27-Oct-22	0.17	\pm 0.41	1	90
28-Oct-22	0.00	\pm 0.00	0	0
29-Oct-22	0.17	\pm 0.41	1	90
30-Oct-22	0.50	\pm 1.22	3	271
31-Oct-22	0.33	\pm 0.82	2	181
01-Nov-22	0.00	\pm 0.00	0	0
02-Nov-22	0.00	\pm 0.00	0	0
03-Nov-22	0.00	\pm 0.00	0	0
04-Nov-22	0.00	\pm 0.00	0	0
05-Nov-22	0.33	\pm 0.82	2	181
06-Nov-22	0.17	\pm 0.41	1	90
07-Nov-22	0.50	\pm 0.84	3	271
08-Nov-22	0.00	\pm 0.00	0	0
09-Nov-22	0.33	\pm 0.52	2	181
10-Nov-22	0.00	\pm 0.00	0	0
11-Nov-22	0.17	\pm 0.41	1	90
12-Nov-22	0.17	\pm 0.41	1	90
13-Nov-22	0.00	\pm 0.00	0	0
14-Nov-22	0.00	\pm 0.00	0	0
15-Nov-22	0.17	\pm 0.41	1	90
16-Nov-22	0.33	\pm 0.82	2	181
17-Nov-22	0.00	\pm 0.00	0	0
18-Nov-22	0.83	\pm 2.04	5	452
19-Nov-22	0.00	\pm 0.00	0	0
20-Nov-22	0.17	\pm 0.41	1	90
21-Nov-22	0.00	\pm 0.00	0	0
22-Nov-22	0.00	\pm 0.00	0	0
23-Nov-22	0.00	\pm 0.00	0	0
24-Nov-22	0.00	\pm 0.00	0	0
25-Nov-22	0.50	\pm 1.22	3	271
26-Nov-22	0.00	\pm 0.00	0	0
27-Nov-22	0.00	\pm 0.00	0	0

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
28-Nov-22	0.00	± 0.00	0	0
29-Nov-22	0.00	± 0.00	0	0
30-Nov-22	0.00	± 0.00	0	0
01-Dec-22	1.83	± 4.49	11	994
02-Dec-22	0.00	± 0.00	0	0
03-Dec-22	0.50	± 1.22	3	271
04-Dec-22	0.33	± 0.82	2	181
05-Dec-22	0.00	± 0.00	0	0
06-Dec-22	0.00	± 0.00	0	0
07-Dec-22	0.00	± 0.00	0	0
08-Dec-22	0.00	± 0.00	0	0
09-Dec-22	0.00	± 0.00	0	0
10-Dec-22	0.00	± 0.00	0	0
11-Dec-22	0.00	± 0.00	0	0
12-Dec-22	0.00	± 0.00	0	0
13-Dec-22	0.00	± 0.00	0	0
14-Dec-22	0.00	± 0.00	0	0
15-Dec-22	0.00	± 0.00	0	0
16-Dec-22	0.00	± 0.00	0	0
17-Dec-22	0.00	± 0.00	0	0
18-Dec-22	0.00	± 0.00	0	0
19-Dec-22	0.00	± 0.00	0	0
20-Dec-22	0.17	± 0.41	1	90
21-Dec-22	0.00	± 0.00	0	0
22-Dec-22	0.50	± 1.22	3	271
23-Dec-22	0.00	± 0.00	0	0
24-Dec-22	0.00	± 0.00	0	0
25-Dec-22	0.00	± 0.00	0	0
26-Dec-22	0.00	± 0.00	0	0
27-Dec-22	0.00	± 0.00	0	0
28-Dec-22	0.00	± 0.00	0	0
29-Dec-22	0.17	± 0.41	1	90
30-Dec-22	0.00	± 0.00	0	0
31-Dec-22	0.00	± 0.00	0	0
01-Jan-23	0.00	± 0.00	0	0
02-Jan-23	0.00	± 0.00	0	0
03-Jan-23	0.00	± 0.00	0	0
04-Jan-23	0.00	± 0.00	0	0
05-Jan-23	0.00	± 0.00	0	0
06-Jan-23	0.00	± 0.00	0	0
07-Jan-23	0.00	± 0.00	0	0
08-Jan-23	0.00	± 0.00	0	0
09-Jan-23	0.00	± 0.00	0	0
10-Jan-23	0.00	± 0.00	0	0
11-Jan-23	0.00	± 0.00	0	0
12-Jan-23	0.00	± 0.00	0	0

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
13-Jan-23	0.00	± 0.00	0	0
14-Jan-23	0.00	± 0.00	0	0
15-Jan-23	0.00	± 0.00	0	0
Total Count / Estimated Influx			58	5,238

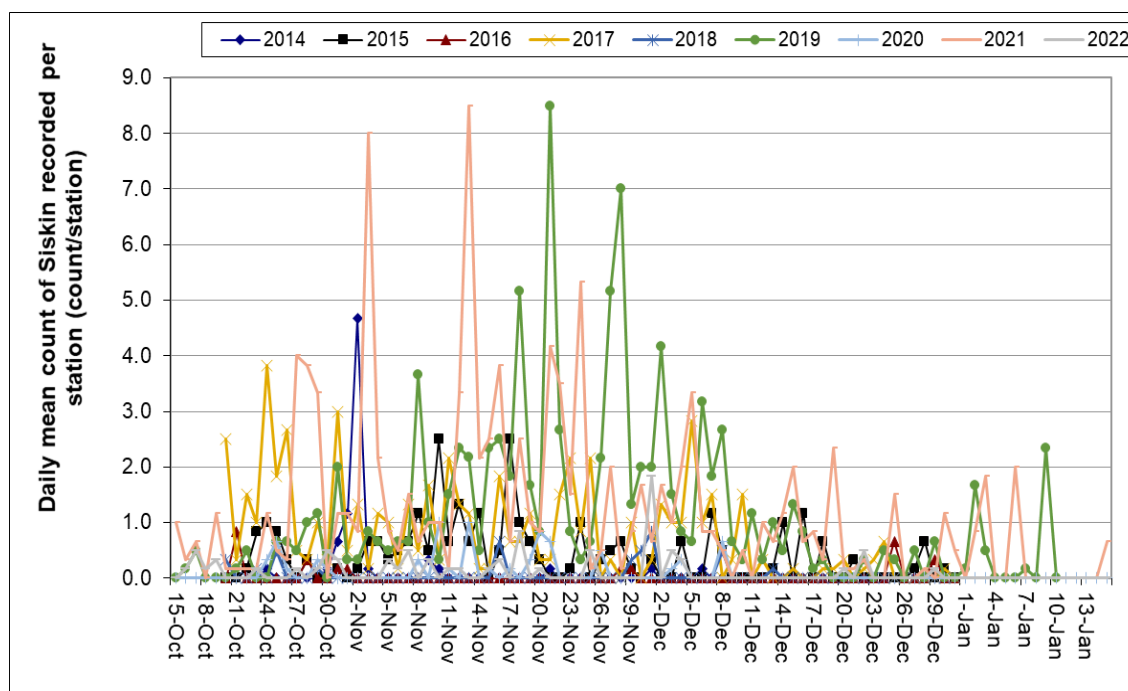


FIGURE 7 – DAILY MEAN COUNTS OF EURASIAN SISKIN PER STATION (= SITE) RECORDED BETWEEN 15 OCTOBER AND 15 JANUARY DURING THE 2022, 2021 AND 2020 SURVEYS, BETWEEN 15 OCTOBER 2019 AND 10 JANUARY 2020 DURING THE 2019 SURVEY, AND BETWEEN 20 OCTOBER AND 31 DECEMBER DURING PREVIOUS (2014, 2015, 2016, 2017, 2018) SURVEYS.

7.21 Raw daily counts for **European Goldfinch** recorded from the 21 sites during the 2022 study varied between 0 and a maximum of 2, while the mean daily counts ranged between 0 and 0.33 (Table 8). Counts for this species were therefore very low overall: between one and two Goldfinch individuals were recorded in total from each of the sites at grid locations 4073, 5064, 5872 and 2888, while no individuals were recorded throughout the survey period from any of the other sites.

7.22 Based on the mean daily counts (Table 8), extrapolation translates to an estimated daily influx ranging between 0 and 181 individuals, with a total influx over the survey period (15 October 2022 – 15 January 2023; i.e. 93 days) of 451 individuals; i.e. some five (5) birds per day.

TABLE 8 - VALUES OF MEAN (\pm SD) DAILY COUNT AND DAILY TOTAL COUNT RECORDED FROM THE SIX STUDY SITES, TOGETHER WITH TOTAL INFLUX OF MIGRATORY EUROPEAN GOLDFINCH

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
15-Oct-22	0.00	\pm 0.00	0	0
16-Oct-22	0.00	\pm 0.00	0	0
17-Oct-22	0.00	\pm 0.00	0	0
18-Oct-22	0.00	\pm 0.00	0	0
19-Oct-22	0.00	\pm 0.00	0	0
20-Oct-22	0.00	\pm 0.00	0	0
21-Oct-22	0.00	\pm 0.00	0	0
22-Oct-22	0.00	\pm 0.00	0	0
23-Oct-22	0.00	\pm 0.00	0	0
24-Oct-22	0.00	\pm 0.00	0	0
25-Oct-22	0.00	\pm 0.00	0	0
26-Oct-22	0.00	\pm 0.00	0	0
27-Oct-22	0.00	\pm 0.00	0	0
28-Oct-22	0.00	\pm 0.00	0	0
29-Oct-22	0.00	\pm 0.00	0	0
30-Oct-22	0.00	\pm 0.00	0	0
31-Oct-22	0.00	\pm 0.00	0	0
01-Nov-22	0.00	\pm 0.00	0	0
02-Nov-22	0.00	\pm 0.00	0	0
03-Nov-22	0.00	\pm 0.00	0	0
04-Nov-22	0.00	\pm 0.00	0	0
05-Nov-22	0.00	\pm 0.00	0	0
06-Nov-22	0.00	\pm 0.00	0	0
07-Nov-22	0.00	\pm 0.00	0	0
08-Nov-22	0.00	\pm 0.00	0	0
09-Nov-22	0.00	\pm 0.00	0	0
10-Nov-22	0.00	\pm 0.00	0	0
11-Nov-22	0.00	\pm 0.00	0	0
12-Nov-22	0.00	\pm 0.00	0	0
13-Nov-22	0.00	\pm 0.00	0	0
14-Nov-22	0.00	\pm 0.00	0	0
15-Nov-22	0.00	\pm 0.00	0	0
16-Nov-22	0.00	\pm 0.00	0	0
17-Nov-22	0.00	\pm 0.00	0	0
18-Nov-22	0.00	\pm 0.00	0	0
19-Nov-22	0.00	\pm 0.00	0	0
20-Nov-22	0.00	\pm 0.00	0	0
21-Nov-22	0.00	\pm 0.00	0	0
22-Nov-22	0.00	\pm 0.00	0	0
23-Nov-22	0.17	\pm 0.41	1	90
24-Nov-22	0.00	\pm 0.00	0	0
25-Nov-22	0.00	\pm 0.00	0	0
26-Nov-22	0.00	\pm 0.00	0	0
27-Nov-22	0.00	\pm 0.00	0	0
28-Nov-22	0.00	\pm 0.00	0	0
29-Nov-22	0.00	\pm 0.00	0	0
30-Nov-22	0.00	\pm 0.00	0	0
01-Dec-22	0.00	\pm 0.00	0	0
02-Dec-22	0.00	\pm 0.00	0	0
03-Dec-22	0.00	\pm 0.00	0	0

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
04-Dec-22	0.00	± 0.00	0	0
05-Dec-22	0.17	± 0.41	1	90
06-Dec-22	0.00	± 0.00	0	0
07-Dec-22	0.00	± 0.00	0	0
08-Dec-22	0.00	± 0.00	0	0
09-Dec-22	0.00	± 0.00	0	0
10-Dec-22	0.00	± 0.00	0	0
11-Dec-22	0.00	± 0.00	0	0
12-Dec-22	0.00	± 0.00	0	0
13-Dec-22	0.00	± 0.00	0	0
14-Dec-22	0.00	± 0.00	0	0
15-Dec-22	0.00	± 0.00	0	0
16-Dec-22	0.00	± 0.00	0	0
17-Dec-22	0.00	± 0.00	0	0
18-Dec-22	0.00	± 0.00	0	0
19-Dec-22	0.00	± 0.00	0	0
20-Dec-22	0.00	± 0.00	0	0
21-Dec-22	0.00	± 0.00	0	0
22-Dec-22	0.00	± 0.00	0	0
23-Dec-22	0.00	± 0.00	0	0
24-Dec-22	0.00	± 0.00	0	0
25-Dec-22	0.00	± 0.00	0	0
26-Dec-22	0.00	± 0.00	0	0
27-Dec-22	0.00	± 0.00	0	0
28-Dec-22	0.00	± 0.00	0	0
29-Dec-22	0.00	± 0.00	0	0
30-Dec-22	0.00	± 0.00	0	0
31-Dec-22	0.00	± 0.00	0	0
01-Jan-23	0.00	± 0.00	0	0
02-Jan-23	0.00	± 0.00	0	0
03-Jan-23	0.00	± 0.00	0	0
04-Jan-23	0.00	± 0.00	0	0
05-Jan-23	0.33	± 0.82	2	181
06-Jan-23	0.17	± 0.41	1	90
07-Jan-23	0.00	± 0.00	0	0
08-Jan-23	0.00	± 0.00	0	0
09-Jan-23	0.00	± 0.00	0	0
10-Jan-23	0.00	± 0.00	0	0
11-Jan-23	0.00	± 0.00	0	0
12-Jan-23	0.00	± 0.00	0	0
13-Jan-23	0.00	± 0.00	0	0
14-Jan-23	0.00	± 0.00	0	0
15-Jan-23	0.00	± 0.00	0	0
Total Count / Estimated Influx			5	451

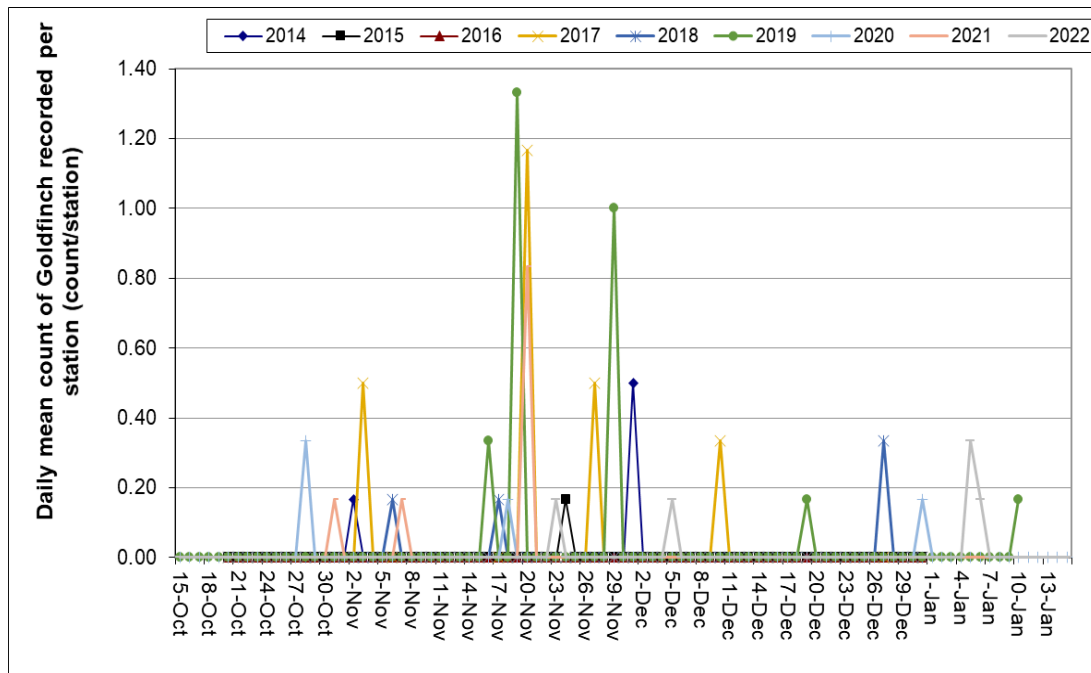


FIGURE 8 DAILY MEAN COUNTS OF EUROPEAN GOLDFINCH PER STATION (= SITE) RECORDED BETWEEN 15 OCTOBER AND 15 JANUARY DURING THE 2022, 2021 AND 2020 SURVEYS, BETWEEN 15 OCTOBER 2019 AND 10 JANUARY 2020 DURING THE 2019 SURVEY, AND BETWEEN 20 OCTOBER AND 31 DECEMBER DURING PREVIOUS (2014, 2015, 2016, 2017, 2018) SURVEYS.

7.23 Raw daily counts for **European Serin** recorded from the 21 sites during the 2022 study varied between 0 and a maximum of 3, while the mean daily counts ranged between 0 and 0.50 (Table 9). Counts for this species were therefore very low, with zero counts recorded on most days. The total counts, i.e. the total number of Serin individuals recorded from a given grid location (= study site) during the whole study period (93 days), did not vary appreciably between the different sites: at the lower end, no individuals were recorded throughout the survey period from 15 of the sites, while at the higher end between one and four Serin individuals were recorded from the sites at grid locations 4085 (which was surveyed daily), 4077, 2888, 6069, 3268 and 5277.

7.24 Based on the mean daily counts (Table 9), extrapolation translates to an estimated daily influx ranging between 0 and 271 individuals, with a total influx over the survey period (15 October 2022 – 15 January 2023; i.e. 93 days) of 1,266 individuals; i.e. some 14 birds per day.

TABLE 9 - VALUES OF MEAN (\pm SD) DAILY COUNT AND DAILY TOTAL COUNT RECORDED FROM THE SIX STUDY SITES, TOGETHER WITH TOTAL INFLUX OF MIGRATORY EUROPEAN SERIN

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
15-Oct-22	0.00	\pm 0.00	0	0
16-Oct-22	0.00	\pm 0.00	0	0
17-Oct-22	0.00	\pm 0.00	0	0
18-Oct-22	0.00	\pm 0.00	0	0
19-Oct-22	0.00	\pm 0.00	0	0
20-Oct-22	0.00	\pm 0.00	0	0
21-Oct-22	0.00	\pm 0.00	0	0
22-Oct-22	0.00	\pm 0.00	0	0
23-Oct-22	0.00	\pm 0.00	0	0
24-Oct-22	0.00	\pm 0.00	0	0
25-Oct-22	0.00	\pm 0.00	0	0
26-Oct-22	0.00	\pm 0.00	0	0
27-Oct-22	0.00	\pm 0.00	0	0
28-Oct-22	0.00	\pm 0.00	0	0
29-Oct-22	0.00	\pm 0.00	0	0
30-Oct-22	0.00	\pm 0.00	0	0
31-Oct-22	0.00	\pm 0.00	0	0
01-Nov-22	0.00	\pm 0.00	0	0
02-Nov-22	0.17	\pm 0.41	1	90
03-Nov-22	0.00	\pm 0.00	0	0
04-Nov-22	0.33	\pm 0.82	2	181
05-Nov-22	0.00	\pm 0.00	0	0
06-Nov-22	0.00	\pm 0.00	0	0
07-Nov-22	0.00	\pm 0.00	0	0
08-Nov-22	0.00	\pm 0.00	0	0
09-Nov-22	0.00	\pm 0.00	0	0
10-Nov-22	0.00	\pm 0.00	0	0
11-Nov-22	0.33	\pm 0.82	2	181
12-Nov-22	0.00	\pm 0.00	0	0
13-Nov-22	0.00	\pm 0.00	0	0
14-Nov-22	0.00	\pm 0.00	0	0
15-Nov-22	0.00	\pm 0.00	0	0
16-Nov-22	0.00	\pm 0.00	0	0
17-Nov-22	0.00	\pm 0.00	0	0
18-Nov-22	0.00	\pm 0.00	0	0
19-Nov-22	0.00	\pm 0.00	0	0
20-Nov-22	0.00	\pm 0.00	0	0
21-Nov-22	0.00	\pm 0.00	0	0
22-Nov-22	0.00	\pm 0.00	0	0
23-Nov-22	0.00	\pm 0.00	0	0
24-Nov-22	0.00	\pm 0.00	0	0
25-Nov-22	0.00	\pm 0.00	0	0
26-Nov-22	0.00	\pm 0.00	0	0
27-Nov-22	0.00	\pm 0.00	0	0
28-Nov-22	0.00	\pm 0.00	0	0
29-Nov-22	0.00	\pm 0.00	0	0
30-Nov-22	0.00	\pm 0.00	0	0
01-Dec-22	0.00	\pm 0.00	0	0
02-Dec-22	0.00	\pm 0.00	0	0
03-Dec-22	0.00	\pm 0.00	0	0

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
04-Dec-22	0.00	± 0.00	0	0
05-Dec-22	0.00	± 0.00	0	0
06-Dec-22	0.00	± 0.00	0	0
07-Dec-22	0.00	± 0.00	0	0
08-Dec-22	0.33	± 0.82	2	181
09-Dec-22	0.00	± 0.00	0	0
10-Dec-22	0.00	± 0.00	0	0
11-Dec-22	0.00	± 0.00	0	0
12-Dec-22	0.00	± 0.00	0	0
13-Dec-22	0.00	± 0.00	0	0
14-Dec-22	0.00	± 0.00	0	0
15-Dec-22	0.00	± 0.00	0	0
16-Dec-22	0.33	± 0.82	2	181
17-Dec-22	0.00	± 0.00	0	0
18-Dec-22	0.00	± 0.00	0	0
19-Dec-22	0.00	± 0.00	0	0
20-Dec-22	0.00	± 0.00	0	0
21-Dec-22	0.00	± 0.00	0	0
22-Dec-22	0.00	± 0.00	0	0
23-Dec-22	0.00	± 0.00	0	0
24-Dec-22	0.00	± 0.00	0	0
25-Dec-22	0.00	± 0.00	0	0
26-Dec-22	0.00	± 0.00	0	0
27-Dec-22	0.00	± 0.00	0	0
28-Dec-22	0.00	± 0.00	0	0
29-Dec-22	0.00	± 0.00	0	0
30-Dec-22	0.00	± 0.00	0	0
31-Dec-22	0.00	± 0.00	0	0
01-Jan-23	0.00	± 0.00	0	0
02-Jan-23	0.00	± 0.00	0	0
03-Jan-23	0.33	± 0.82	2	181
04-Jan-23	0.00	± 0.00	0	0
05-Jan-23	0.00	± 0.00	0	0
06-Jan-23	0.00	± 0.00	0	0
07-Jan-23	0.00	± 0.00	0	0
08-Jan-23	0.00	± 0.00	0	0
09-Jan-23	0.00	± 0.00	0	0
10-Jan-23	0.00	± 0.00	0	0
11-Jan-23	0.50	± 0.84	3	271
12-Jan-23	0.00	± 0.00	0	0
13-Jan-23	0.00	± 0.00	0	0
14-Jan-23	0.00	± 0.00	0	0
15-Jan-23	0.00	± 0.00	0	0
Total Count / Estimated Influx			14	1,266

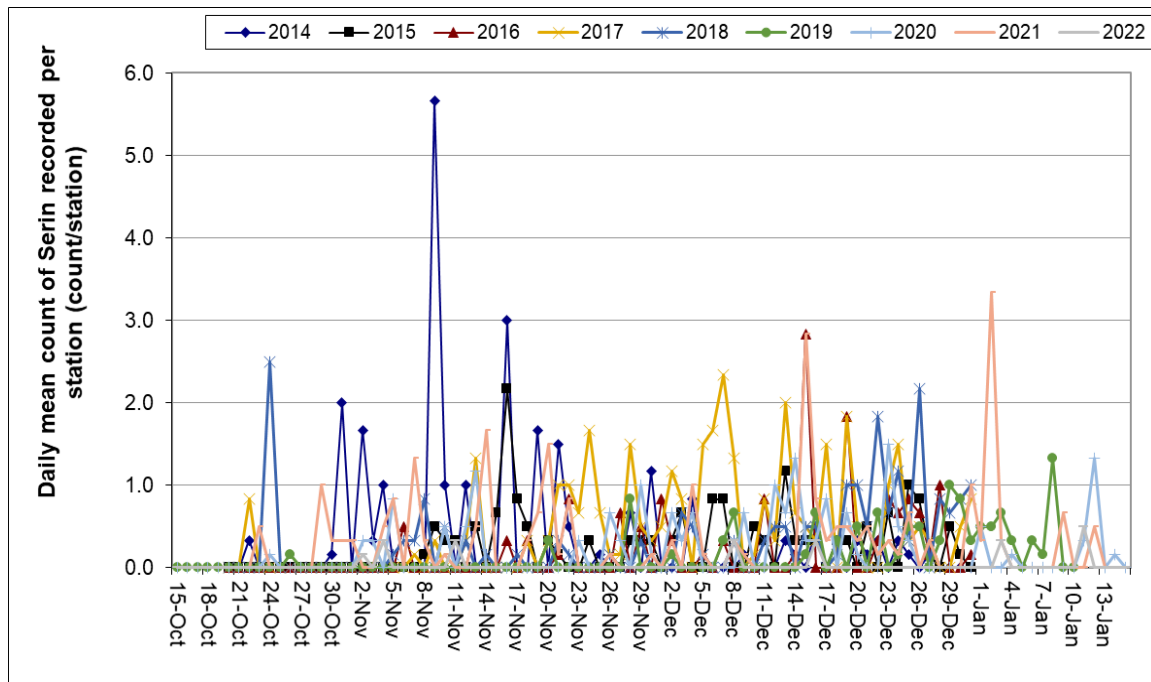


FIGURE 9 – DAILY MEAN COUNTS OF EUROPEAN SERIN PER STATION (= SITE) RECORDED BETWEEN 15 OCTOBER AND 15 JANUARY DURING THE 2022, 2021 AND 2020 SURVEYS, BETWEEN 15 OCTOBER 2019 AND 10 JANUARY 2020 DURING THE 2019 SURVEY, AND BETWEEN 20 OCTOBER AND 31 DECEMBER DURING PREVIOUS (2014, 2015, 2016, 2017, 2018) SURVEYS.

7.25 Raw daily counts for **Hawfinch** recorded from the 21 sites during the 2022 study varied between 0 and a maximum of 1, while the mean daily counts ranged between 0 and 0.17 (Table 10). Counts for this species were therefore low overall: zero counts were recorded from nearly all of the study sites, while between one and two Hawfinch individuals were recorded in total from two sites (Grid locations 4070 and 4878). It should be noted, however, that 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, which could therefore lead to under-sampling.

7.26 The estimated total influx of Hawfinch over the Maltese Islands is given in Table 10. Based on the mean daily counts (Table 8), extrapolation translates to an estimated daily influx ranging between 0 and 90 individuals, with a total influx over the survey period (15 October 2022 – 15 January 2023; i.e. 93 days) of 270 individuals; i.e. some three (3) birds per day.

TABLE 10 - VALUES OF MEAN (\pm SD) DAILY COUNT AND DAILY TOTAL COUNT RECORDED FROM THE SIX STUDY SITES, TOGETHER WITH TOTAL INFLUX OF MIGRATORY HAWFINCH

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
15-Oct-22	0.00	\pm 0.00	0	0
16-Oct-22	0.00	\pm 0.00	0	0
17-Oct-22	0.00	\pm 0.00	0	0
18-Oct-22	0.00	\pm 0.00	0	0
19-Oct-22	0.00	\pm 0.00	0	0
20-Oct-22	0.00	\pm 0.00	0	0
21-Oct-22	0.00	\pm 0.00	0	0
22-Oct-22	0.00	\pm 0.00	0	0
23-Oct-22	0.00	\pm 0.00	0	0
24-Oct-22	0.00	\pm 0.00	0	0
25-Oct-22	0.00	\pm 0.00	0	0
26-Oct-22	0.00	\pm 0.00	0	0
27-Oct-22	0.00	\pm 0.00	0	0
28-Oct-22	0.17	\pm 0.41	1	90
29-Oct-22	0.00	\pm 0.00	0	0
30-Oct-22	0.00	\pm 0.00	0	0
31-Oct-22	0.00	\pm 0.00	0	0
01-Nov-22	0.00	\pm 0.00	0	0
02-Nov-22	0.00	\pm 0.00	0	0
03-Nov-22	0.00	\pm 0.00	0	0
04-Nov-22	0.17	\pm 0.41	1	90
05-Nov-22	0.00	\pm 0.00	0	0
06-Nov-22	0.00	\pm 0.00	0	0
07-Nov-22	0.00	\pm 0.00	0	0
08-Nov-22	0.00	\pm 0.00	0	0
09-Nov-22	0.00	\pm 0.00	0	0
10-Nov-22	0.00	\pm 0.00	0	0
11-Nov-22	0.00	\pm 0.00	0	0
12-Nov-22	0.00	\pm 0.00	0	0
13-Nov-22	0.17	\pm 0.41	1	90
14-Nov-22	0.00	\pm 0.00	0	0
15-Nov-22	0.00	\pm 0.00	0	0
16-Nov-22	0.00	\pm 0.00	0	0
17-Nov-22	0.00	\pm 0.00	0	0
18-Nov-22	0.00	\pm 0.00	0	0
19-Nov-22	0.00	\pm 0.00	0	0
20-Nov-22	0.00	\pm 0.00	0	0
21-Nov-22	0.00	\pm 0.00	0	0
22-Nov-22	0.00	\pm 0.00	0	0
23-Nov-22	0.00	\pm 0.00	0	0
24-Nov-22	0.00	\pm 0.00	0	0
25-Nov-22	0.00	\pm 0.00	0	0
26-Nov-22	0.00	\pm 0.00	0	0
27-Nov-22	0.00	\pm 0.00	0	0
28-Nov-22	0.00	\pm 0.00	0	0
29-Nov-22	0.00	\pm 0.00	0	0
30-Nov-22	0.00	\pm 0.00	0	0
01-Dec-22	0.00	\pm 0.00	0	0
02-Dec-22	0.00	\pm 0.00	0	0

Date	Mean daily count	Standard deviation	Total daily count	Estimated daily influx
03-Dec-22	0.00	± 0.00	0	0
04-Dec-22	0.00	± 0.00	0	0
05-Dec-22	0.00	± 0.00	0	0
06-Dec-22	0.00	± 0.00	0	0
07-Dec-22	0.00	± 0.00	0	0
08-Dec-22	0.00	± 0.00	0	0
09-Dec-22	0.00	± 0.00	0	0
10-Dec-22	0.00	± 0.00	0	0
11-Dec-22	0.00	± 0.00	0	0
12-Dec-22	0.00	± 0.00	0	0
13-Dec-22	0.00	± 0.00	0	0
14-Dec-22	0.00	± 0.00	0	0
15-Dec-22	0.00	± 0.00	0	0
16-Dec-22	0.00	± 0.00	0	0
17-Dec-22	0.00	± 0.00	0	0
18-Dec-22	0.00	± 0.00	0	0
19-Dec-22	0.00	± 0.00	0	0
20-Dec-22	0.00	± 0.00	0	0
21-Dec-22	0.00	± 0.00	0	0
22-Dec-22	0.00	± 0.00	0	0
23-Dec-22	0.00	± 0.00	0	0
24-Dec-22	0.00	± 0.00	0	0
25-Dec-22	0.00	± 0.00	0	0
26-Dec-22	0.00	± 0.00	0	0
27-Dec-22	0.00	± 0.00	0	0
28-Dec-22	0.00	± 0.00	0	0
29-Dec-22	0.00	± 0.00	0	0
30-Dec-22	0.00	± 0.00	0	0
31-Dec-22	0.00	± 0.00	0	0
01-Jan-23	0.00	± 0.00	0	0
02-Jan-23	0.00	± 0.00	0	0
03-Jan-23	0.00	± 0.00	0	0
04-Jan-23	0.00	± 0.00	0	0
05-Jan-23	0.00	± 0.00	0	0
06-Jan-23	0.00	± 0.00	0	0
07-Jan-23	0.00	± 0.00	0	0
08-Jan-23	0.00	± 0.00	0	0
09-Jan-23	0.00	± 0.00	0	0
10-Jan-23	0.00	± 0.00	0	0
11-Jan-23	0.00	± 0.00	0	0
12-Jan-23	0.00	± 0.00	0	0
13-Jan-23	0.00	± 0.00	0	0
14-Jan-23	0.00	± 0.00	0	0
15-Jan-23	0.00	± 0.00	0	0
Total Count / Estimated Influx			3	270

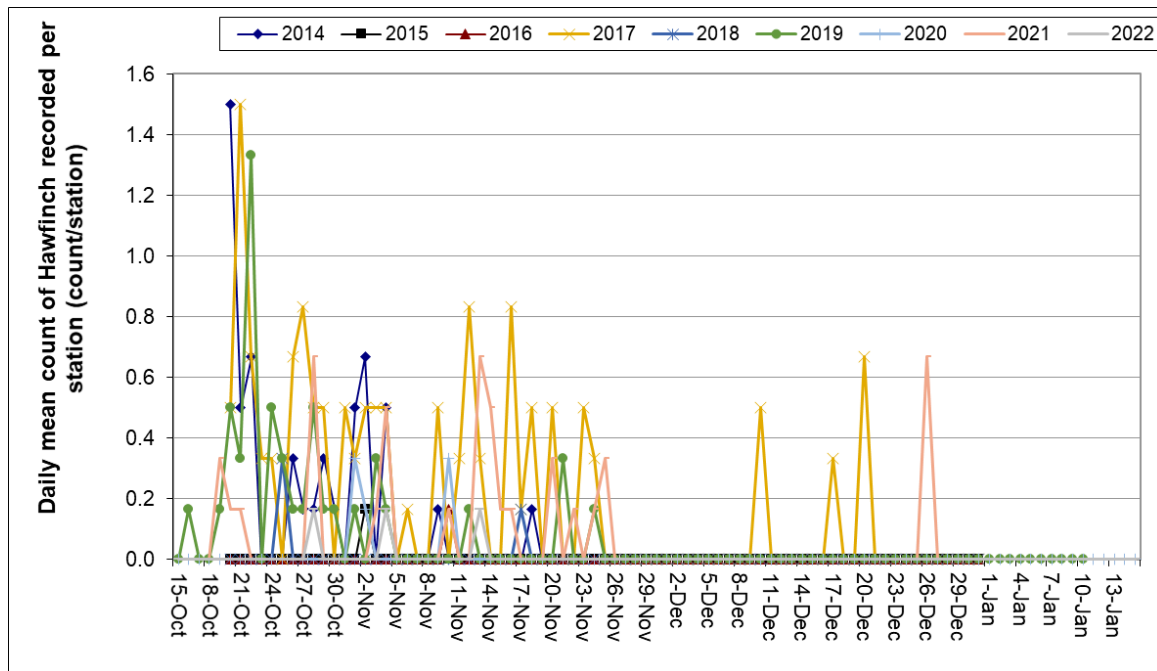
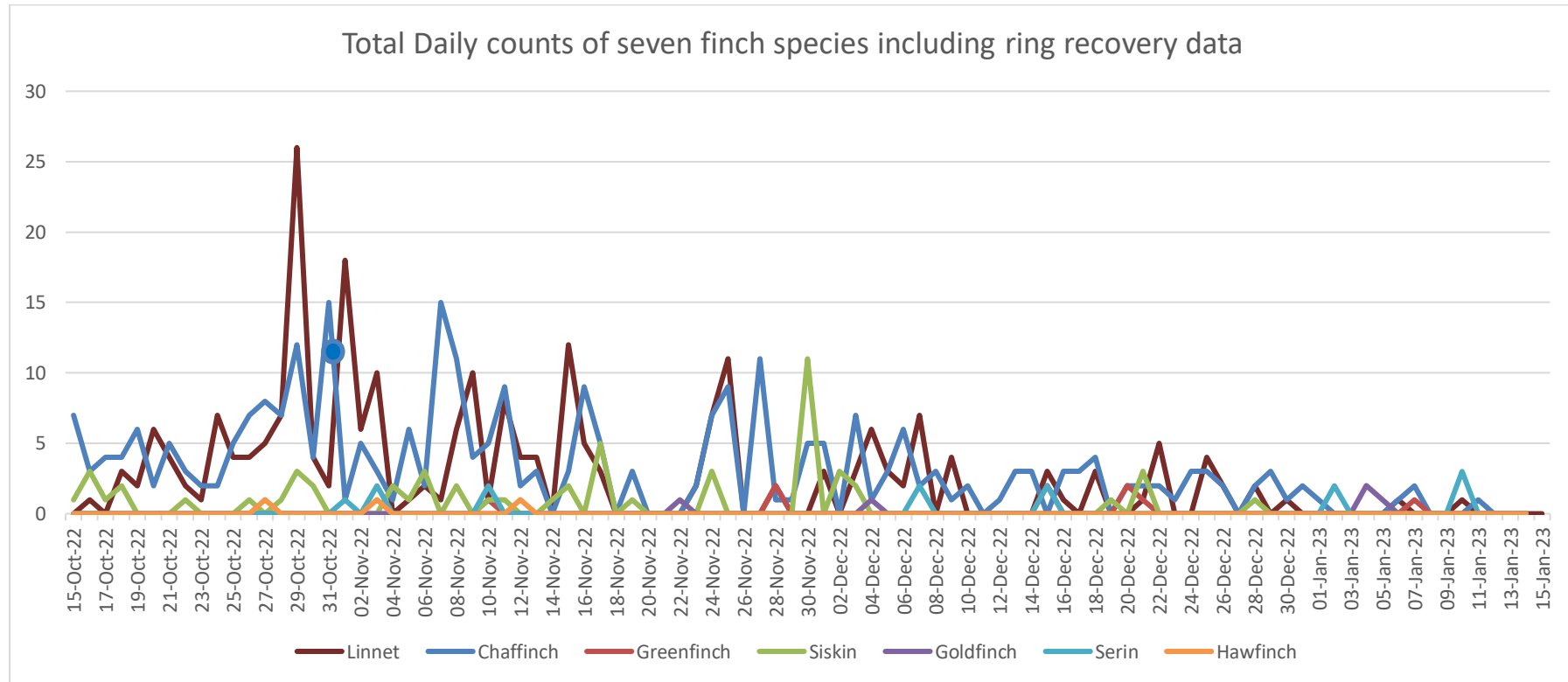


FIGURE 10 – DAILY MEAN COUNTS OF HAWFINCH PER STATION (= SITE) RECORDED BETWEEN 15 OCTOBER AND 15 JANUARY DURING THE 2022, 2021 AND 2020 SURVEYS, BETWEEN 15 OCTOBER 2019 AND 10 JANUARY 2020 DURING THE 2019 SURVEY, AND BETWEEN 20 OCTOBER AND 31 DECEMBER DURING PREVIOUS (2014, 2015, 2016, 2017, 2018) SURVEYS.

7.27 Figure 11 shows the total daily counts of each of the seven finch species and the day in which a ring recovery was recorded. This year one Chaffinch having a ring was retrieved on the 30 October 2022. Further information on ring recoveries may be found in Section 5.

FIGURE 11 - TOTAL DAILY COUNTS OF THE SEVEN FINCH SPECIES (= SITE) RECORDED BETWEEN 15 OCTOBER 2022 AND 15 JANUARY 2023 ILLUSTRATING (WITH A DOT) THE DAY IN WHICH A RING RECOVERY WAS RECORDED. THE COLOUR OF THE DOT CORRESPONDS TO THE SPECIES RECOVERED (CHAFFINCH)



8. COMPARISON BETWEEN MIGRATORY STUDY DATA AND RESEARCH DEROGATION DATA

- 8.1 A comparative analysis of the results obtained during the migratory study with data obtained from the finch research derogation 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 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 2022 survey should broadly correspond to dates when higher numbers of birds were captured and released (and reported in the research derogation data) in the same year. 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.
- 8.2 Graphical representations of the mean daily counts made during the 2022 survey and the research derogation counts for the same time period (15 October 2022 – 15 January 2023) in 2022 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.
- 8.3 Overall, the highest daily counts recorded for the Common Linnet during the 2022 survey were between late October and late November, with counts declining thereafter. The 2022 research derogation data included

a period of higher counts from late October to late November, with counts declining thereafter. Thus, the general trend observed in the both the mean daily counts made during the 2022 survey and in the research derogation counts for 2022 is of higher counts from late October to late November (Figure 12 and Figure 13).

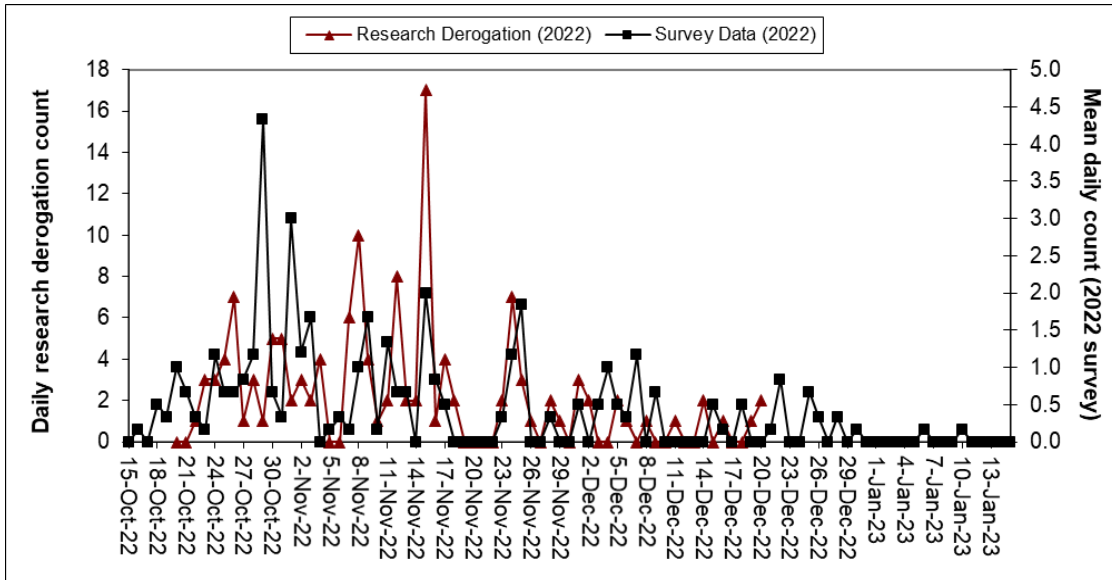


FIGURE 12 DAILY RESEARCH DEROGATION COUNT OF COMMON LINNET FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MEAN DAILY COUNTS RECORDED DURING THE 2022 MIGRATION SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

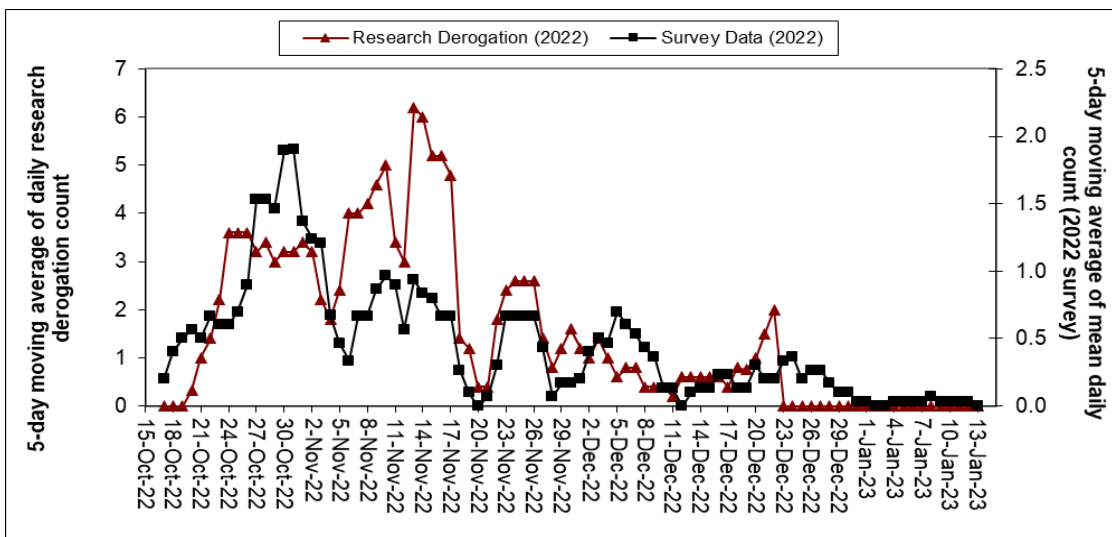


FIGURE 13 MOVING AVERAGE BASED ON A 5-DAY ROLLING TIME PERIOD FOR THE DAILY RESEARCH DEROGATION COUNTS OF COMMON LINNET FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MOVING AVERAGE FOR THE MEAN DAILY COUNTS RECORDED DURING THE 2022 SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

8.4 Overall, the highest daily counts recorded during the 2022 survey for the Common Chaffinch were made between late October and mid-November, with counts showing a decreasing trend thereafter. The highest research derogation counts were also reported between late October and mid-November, while zero counts were reported on most days during December. Thus, the general trend observed in the research derogation counts for 2022 and daily counts recorded during the 2022 survey is of higher counts between late October and mid-November (Figure 14 and Figure 15).

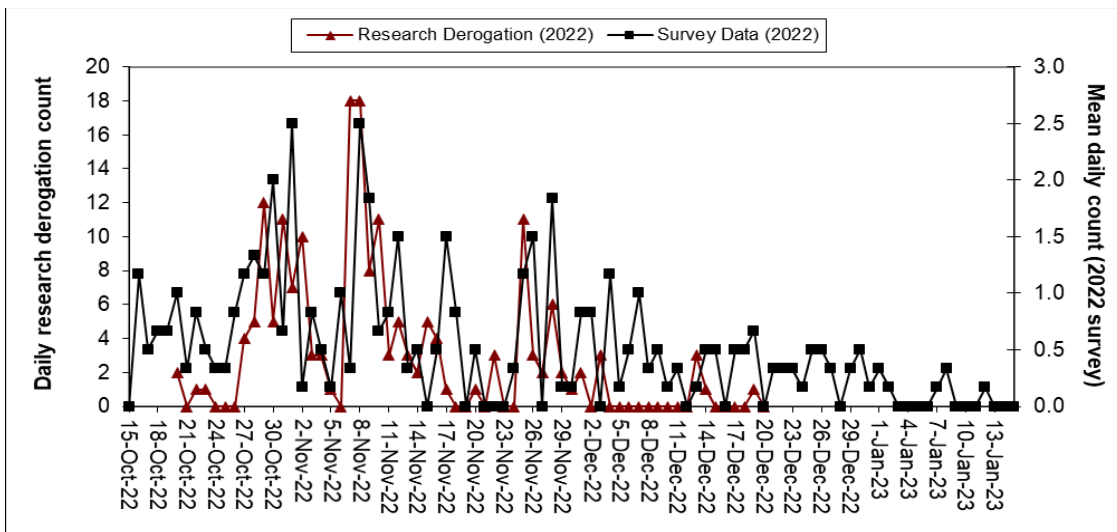


FIGURE 14 DAILY RESEARCH DEROGATION COUNT OF COMMON CHAFFINCH FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MEAN DAILY COUNTS RECORDED DURING THE 2022 MIGRATION SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

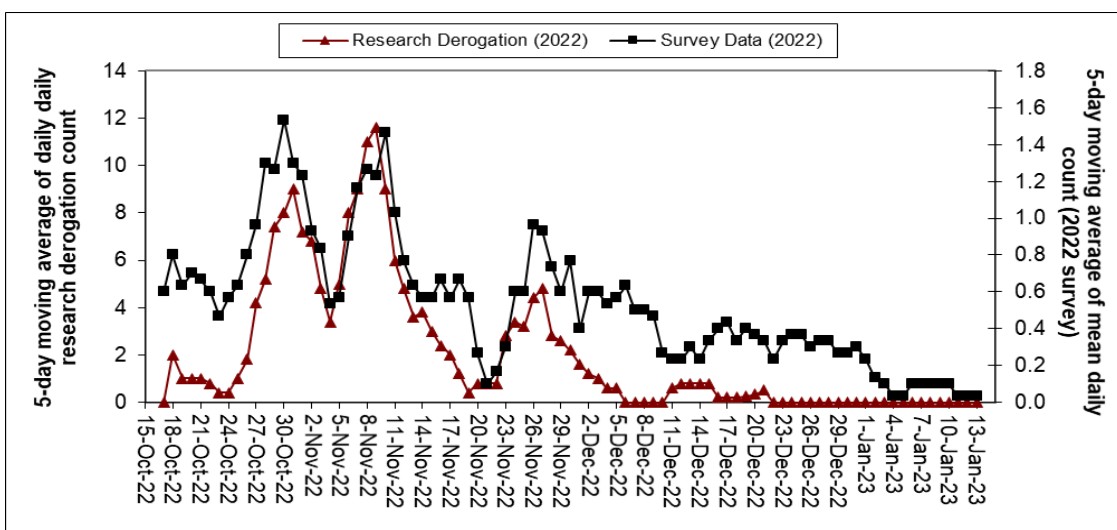


FIGURE 15 MOVING AVERAGE BASED ON A 5-DAY ROLLING TIME PERIOD FOR THE DAILY RESEARCH DEROGATION COUNTS OF COMMON CHAFFINCH FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MOVING AVERAGE FOR THE MEAN DAILY COUNTS RECORDED DURING THE 2022 SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

8.5 Only sporadic counts were recorded for the European Greenfinch during the 2022 survey, such that most days were characterised by zero counts. The research derogation data showed a similar pattern of mostly zero counts. Therefore, the general trend observed in the research derogation counts for 2022 and daily counts recorded during the 2022 survey is of only occasional sporadic counts on some days, and zero counts on most days. Inferences on temporal trends in migration rates cannot be drawn based on such limited data (Figure 16 and Figure 17).

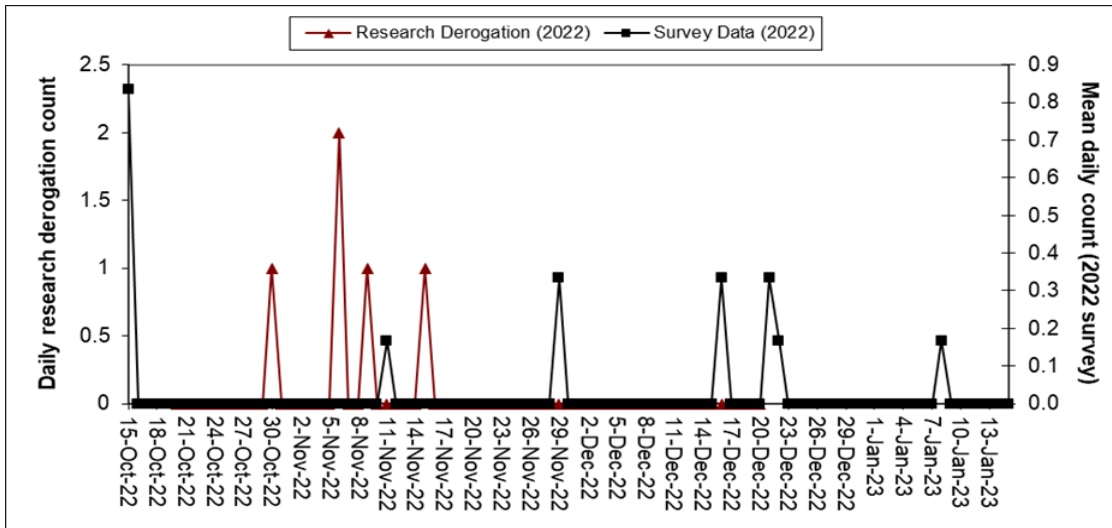


FIGURE 16 DAILY RESEARCH DEROGATION COUNT OF EUROPEAN GREENFINCH FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MEAN DAILY COUNTS RECORDED DURING THE 2022 MIGRATION SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

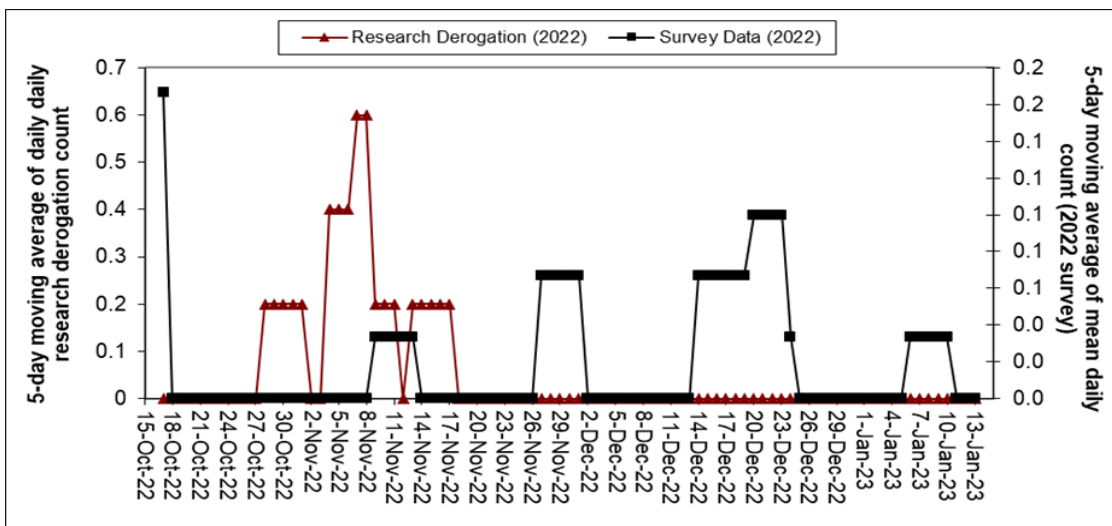


FIGURE 17 MOVING AVERAGE BASED ON A 5-DAY ROLLING TIME PERIOD FOR THE DAILY RESEARCH DEROGATION COUNTS OF EUROPEAN GREENFINCH FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MOVING AVERAGE FOR THE MEAN DAILY COUNTS RECORDED DURING THE 2022 SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

8.6 European Goldfinch individuals were only recorded on four days during the 2022 survey, and on two days in the research derogation data. Inferences on temporal trends in migration rates cannot be drawn based on such limited data (Figure 18 and Figure 19).

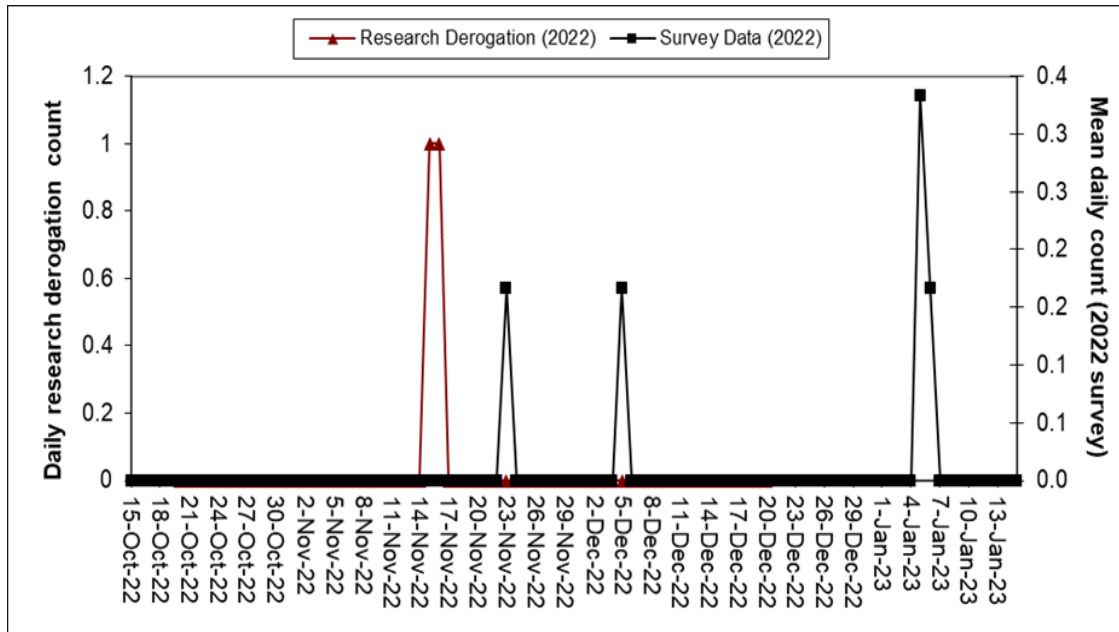


FIGURE 18 DAILY RESEARCH DEROGATION COUNT OF EUROPEAN GOLDFINCH FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MEAN DAILY COUNTS RECORDED DURING THE 2022 MIGRATION SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

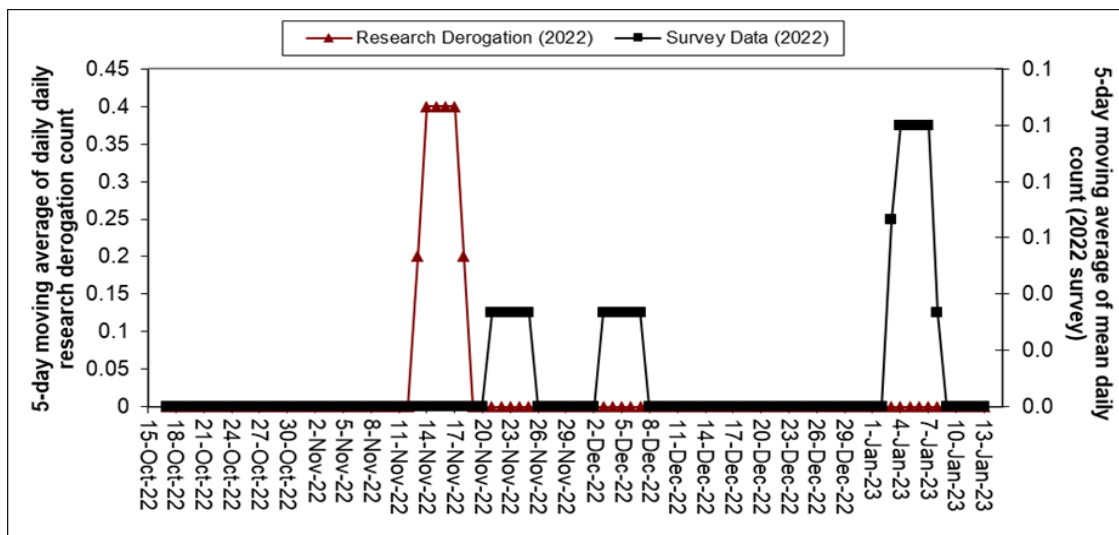


FIGURE 19 MOVING AVERAGE BASED ON A 5-DAY ROLLING TIME PERIOD FOR THE DAILY RESEARCH DEROGATION COUNTS OF EUROPEAN GOLDFINCH FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MOVING AVERAGE FOR THE MEAN DAILY COUNTS RECORDED DURING THE 2022 SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

8.7 Only sporadic counts were recorded for the European Serin during the 2022 survey, such that most days were characterised by zero counts. The

research derogation data showed a similar pattern of mostly zero counts. Therefore, the general trend observed in the research derogation counts for 2022 and daily counts recorded during the 2022 survey is of only occasional sporadic counts on some days, and zero counts on most days. Inferences on temporal trends in migration rates cannot be drawn based on such limited data (Figure 20 and Figure 21).

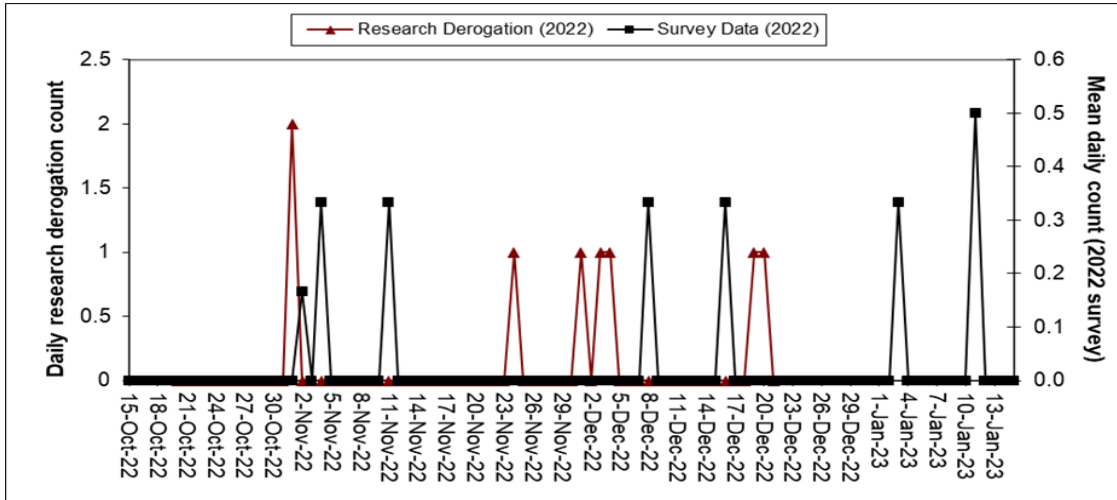


FIGURE 20 DAILY RESEARCH DEROGATION COUNT OF EUROPEAN SERIN FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MEAN DAILY COUNTS RECORDED DURING THE 2022 MIGRATION SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

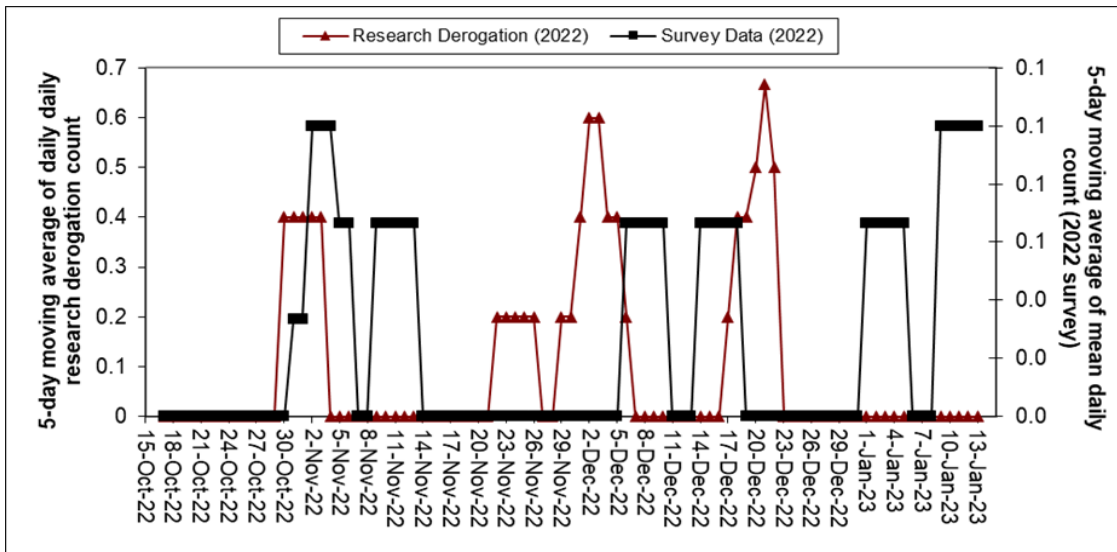


FIGURE 21 MOVING AVERAGE BASED ON A 5-DAY ROLLING TIME PERIOD FOR THE DAILY RESEARCH DEROGATION COUNTS OF EUROPEAN SERIN FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MOVING AVERAGE FOR THE MEAN DAILY COUNTS RECORDED DURING THE 2022 SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

8.8 Hawfinch individuals were only recorded on three days during the 2022 survey, and on two days in the research derogation data. Although all counts were made between late October and mid-November, inferences

on temporal trends in migration rates cannot be drawn based on such limited data (Figure 22 and Figure 23).

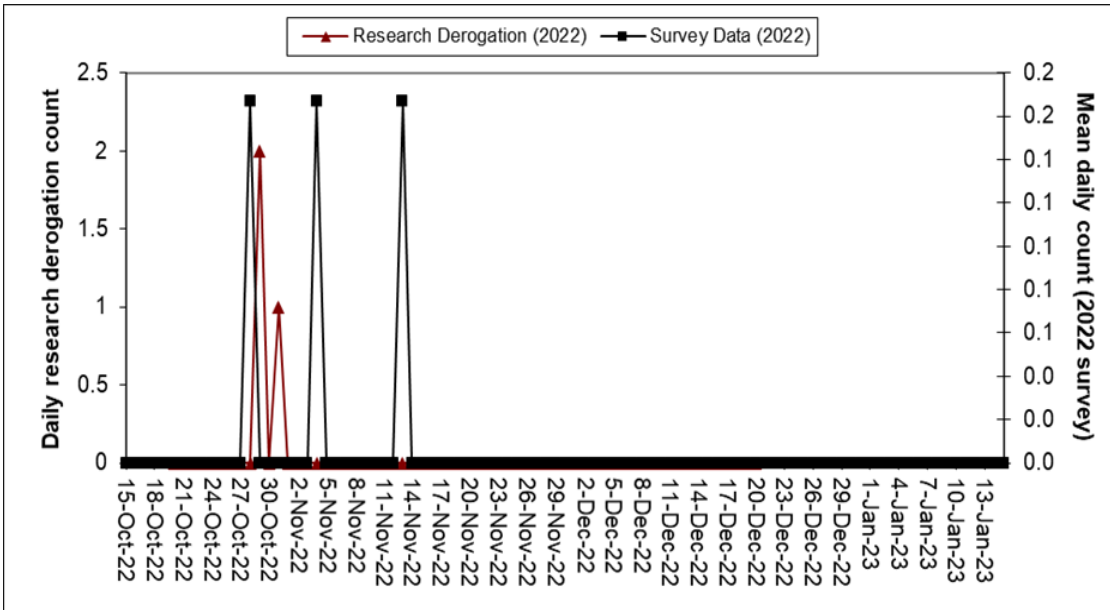


FIGURE 22 DAILY RESEARCH DEROGATION COUNT OF HAWFINCH FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MEAN DAILY COUNTS RECORDED DURING THE 2022 MIGRATION SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

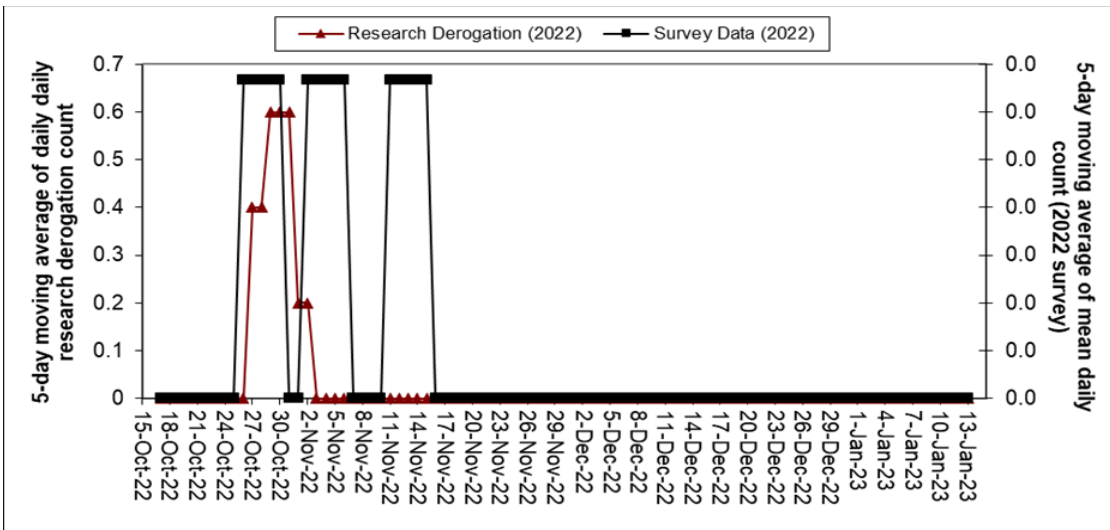


FIGURE 23 MOVING AVERAGE BASED ON A 5-DAY ROLLING TIME PERIOD FOR THE DAILY RESEARCH DEROGATION COUNTS OF HAWFINCH FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MOVING AVERAGE FOR THE MEAN DAILY COUNTS RECORDED DURING THE 2022 SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

8.9 Overall, during the 2022 survey, records for the Eurasian Siskin were more frequent between late October and late November; zero counts were recorded on most days during December. The research derogation counts data showed a similar trend of more frequent records from late October to late November, and zero counts on most days in December. Thus, the

general trend observed in the research derogation counts for 2022 and daily counts recorded during the 2022 survey is of more frequent counts between late October and late November, and zero counts on most days in December (Figure 24 and Figure 25).

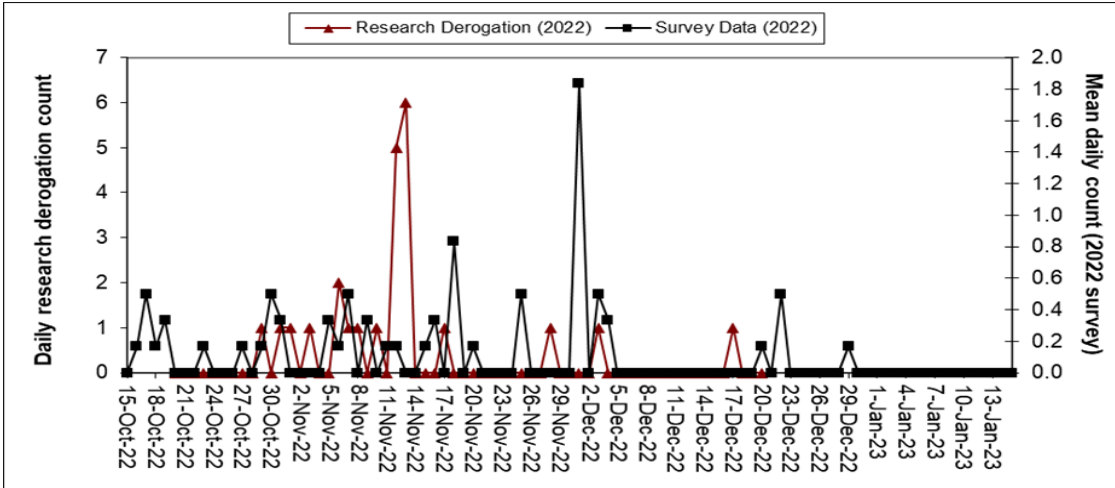


FIGURE 24 DAILY RESEARCH DEROGATION COUNT OF EURASIAN SISKIN FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MEAN DAILY COUNTS RECORDED DURING THE 2022 MIGRATION SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

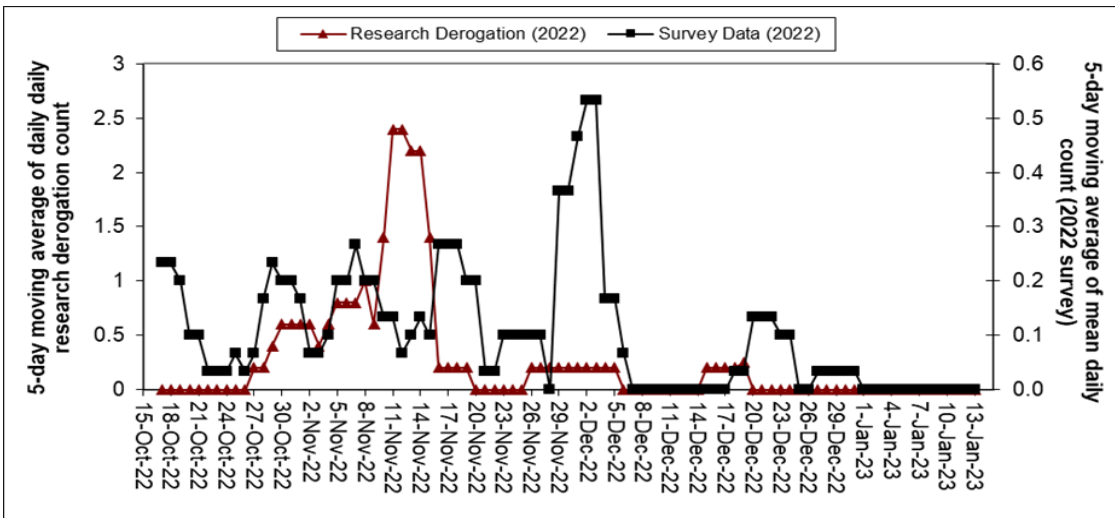


FIGURE 25 MOVING AVERAGE BASED ON A 5-DAY ROLLING TIME PERIOD FOR THE DAILY RESEARCH DEROGATION COUNTS OF EURASIAN SISKIN FOR THE PERIOD 20 OCTOBER TO 20 DECEMBER 2022 (RED LINE; VALUES ON LEFT-SIDE Y-AXIS), TOGETHER WITH THE MOVING AVERAGE FOR THE MEAN DAILY COUNTS RECORDED DURING THE 2022 SURVEY (BLACK LINE; VALUES ON RIGHT-SIDE Y-AXIS) FOR THE PERIOD 15 OCTOBER 2022 TO 15 JANUARY 2023.

9. ENFORCEMENT AND STRICT SUPERVISION

9.1 Prior to the start of the research period, enforcement officials detailed to carry out patrols and spot-checks received specialised training on enforcement priorities and techniques organised by the Wild Birds Regulation Unit. During these sessions, enforcement officers were given a detailed insight on all the parameters of the derogation as well as clear guidance on procedures to be followed when offences are detected. The attendees were also trained in basic field ornithology and avian ecology, as well as on the relevant regulations and licence conditions, inspection techniques, principles of surveillance as well as counter-poaching operations and wildlife crime detection and prosecution techniques.

Overall deployment and field surveillance

9.2 The Framework Regulations stipulate that during all hours for which a research period for the relevant species is open, the total number of police officers and/or marshals assigned to carry out spot-checks shall be in the region of fifty (50). Outside these hours, at least four (4) police officers and/or marshals shall be on duty.

9.3 The Framework Regulations also specify that, outside these hours, police officers and/or marshals shall continue to carry out spot-checks until at least four (4) weeks following the closure of the research period, with a minimum enforcement deployment of four (4) police officers for every one thousand (1,000) special licences issued.

9.4 Regulation 13(7) of the Framework Regulations details a standard operating procedure for enforcement, which requests that in pursuance of their duties under these regulations, the Police, assisted by marshals as may be necessary, shall carry out **daily systematic spot-checks** throughout the research period, in all the regions shown in the Schedule (Figure 26). The Framework Regulations specify that in Gozo, spot-checks in regions 1 and 3 shall be carried out simultaneously with spot-checks in regions 2 and 4 by separate police officers. Similarly in Malta, spot-checks in regions 5, 6 and 8 shall be carried out simultaneously with spot-checks in regions 7,9 and 10 by separate police officers and that spot-checks within each region in Malta and Gozo shall be carried out daily.

SCHEDULE

Subdivision of Malta and Gozo into regions for systematic spot-checks
at research stations



FIGURE 26 SUBDIVISION OF MALTA AND GOZO INTO REGIONS FOR SYSTEMATIC SPOT-CHECKS.

- 9.5 Given that there were 3,109 special licences issued under the terms of the 2022 derogation (2,205 in Malta and 904 in Gozo) and in view of the statutory requirement of 50 officers during permitted hours, 35 officers were required in Malta and 15 officers in Gozo. However, also taking into account that in parallel with the finch research derogation there was also a separate derogation concerning live-capturing of Golden Plover and Song Thrush, for which a further 1,277 special licences were issued (i.e. the total number of licensed persons participating in either one or in both derogations was 3,306¹³), the Maltese authorities opted to exceed this requirement to ensure for the strictest supervision possible.
- 9.6 During the 2022 finches research period (20 October to 20 December), the enforcement authorities deployed a total overall complement of 59 officers to oversee and supervise the parameters of the derogation (Table 11).

¹³ 3,109 finch research licences + 1,277 Golden Plover and Song Thrush licences less 1,080 persons in possession of both licence categories = 3,306 licensees.

TABLE 11: DEPLOYMENT OF ENFORCEMENT OFFICERS DURING THE AUTUMN 2022 FINCHES RESEARCH PERIOD

Entity	Number of officers	Duties
Environment Protection Unit (EPU) of the Police	18	Field patrols, surveillance, inspections, spot-checks, investigations, and prosecution.
District police officers seconded to the EPU	10	
Gozo police	14	
Armed Forces of Malta	8	Field patrols and surveillance
Environmental rangers	3	Patrols in Terrestrial Natura 2000 sites, other protected and scheduled areas and public ODZ sites, reporting illegal activities to Police
Wild Birds Regulation Unit	6	Verification of compliance with registration conditions; assistance to police in prosecution processes, other expert services
Total	59	

9.7 Police (EPU, District and Gozo police) and the Armed Forces of Malta maintained a daily field deployment that ranged between a maximum of 56 officers and a minimum of 42 officers in the field at any point in time from 05:00hrs to 15:00hrs and a maximum of 55 officers and a minimum of 38 officers in the field at any point in time from 15:00hrs to 21:00hrs. This includes all other non-field staff assigned on-duties related to the supervision of the research period but excludes field staff on shift rotation. In addition to this complement, the three Environmental rangers were deployed on a twelve-hour shift from 06:30hrs to 18:30hrs on patrols in Terrestrial Natura 2000 sites, other protected and scheduled areas and public ODZ sites, whilst WBRU officers were active daily from 07:15hrs to 16:00hrs as well as on-call during other hours. These officers reported illegal activities directly to Police.

9.8 During the derogation period, the Police Force and the Armed Forces of Malta carried out 2,265 spot-checks (1,565 in Malta and 700 in Gozo) on individual licensees. This equates to a minimum enforcement effort of three spot-checks for every ten active licensees.¹⁴ Table 12 lists the number of officers deployed, number of spot-checks on individual data collectors per region, infringements related to this derogation and persons charged.

¹⁴ Calculated as follows: 2,265 total spot-checks / 64 days of the research period = 35.39 daily spot-checks / max. 130 active licensees on any given day = 0.27 spot-checks per licensee x 10 licensees = ratio of 3:10.

TABLE 12 DAILY ENFORCEMENT STATISTICS DURING FINCHES RESEARCH PERIOD

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
20/10/2022	41	11	38	9	8	1	2	3	6	4	7	10	4	5	1 Trapping without a licence ¹⁵		1 Court action	
21/10/2022	37	13	39	9	6	2	3	6	5	1	3	5	2	3	1 Unattended trapping site ¹⁶		0 Court action	
22/10/2022	37	11	38	12	6	1	4	8	3	2	5	2	2	1	1 Trapping without a general licence ¹⁷ 2 Trapping on unregistered sites ¹⁸		3 Court action	
23/10/2022	43	11	41	9	7	2	2	4	2	3	2	3	1	4	2 Trapping without a general licence ¹⁹ 1 Trapping on an unregistered site ²⁰		2 Court action	
24/10/2022	39	12	42	9	4	1	9	2	3	4	6	1	3	1	1 Trapping on unregistered site ²¹ 2 Trapping without a general licence ²²		4 Court action	

¹⁵ Case refers to an individual caught trapping without a special licence in Ħandaq, Qormi. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

¹⁶ Case refers to the discovery of an unattended trapping site in Bormla. The police seized all trapping paraphernalia and finches, however no further legal action could be taken since the individual remained unknown to the police.

¹⁷ Case refers to an individual caught trapping without a general licence in Kordin, Paola. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

¹⁸ Cases refer to two individuals caught trapping on unregistered sites in the area of Magħtab (l/o) Naxxar and Birżebbuġa. Police seized all trapping paraphernalia and finches and initiated legal action against the individuals.

¹⁹ Cases refer to two individuals caught trapping without a general licence in the limits of Girgenti, Siġġiewi. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individuals.

²⁰ Case refers to the discovery of an unregistered and unattended trapping site in Chadwick Lakes, Rabat. The police seized all trapping paraphernalia and finches, however no further legal action could be taken since the individual remained unknown to the police.

²¹ Case refers to an individual found trapping on an unregistered site in Birżebbuġa. Police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

²² Cases refer to two individuals found trapping without a general licence in Rabat and Gudja. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individuals.

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
															1 Trapping using incorrectly marked decoys ²³			
25/10/2022	42	11	42	10	7	2	8	2	4	2	3	5	6	7	1 Trapping on an unregistered site ²⁴		1 Court action	
26/10/2022	35	14	37	14	6	2	7	4	9	3	5	2	3	6	3 Trapping without a general licence ²⁵		3 Court action	
27/10/2022	39	12	41	10	3	1	2	8	7	6	3	3	1	1	1 Trapping without a general licence ²⁶ 1 Trapping on an unregistered site ²⁷	1 Trapping on an unregistered site ²⁸	2 Court action	0 Court action
28/10/2022	37	12	42	13	2	4	4	9	11	6	6	1	8	4	1 Trapping without a general licence ²⁹ 2 Trapping on unregistered sites ³⁰		3 Court action	
29/10/2022	37	14	41	9	5	2	2	2	7	12	1	4	4	3	2 Trapping without a general licence ³¹		3 Court action	

²³ Case refers to an individual found in possession of finches not fitted with an official R16U ring whilst participating in the research derogation. The police confiscated all trapping paraphernalia and finches and initiated legal action against him. On 10 January 2023, the person was found guilty of charges and fined €1,500, had his trapping licence suspended for 2 years and ordered the confiscation of *corpus delicti*.

²⁴ Case refers to an individual found trapping on an unregistered trapping site in Mosta. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

²⁵ Cases refer to three individuals caught trapping without a general licence in Żejtun, Siġġiewi and Mġarr. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individuals.

²⁶ Case refers to an individual caught trapping without a general licence in Dingli. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

²⁷ Case refers to an individual found trapping on an unregistered trapping site in Siġġiewi. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

²⁸ Case refers to the discovery of an unregistered and unattended trapping site in Gozo. The police seized all trapping paraphernalia and finches however no further legal action could be taken since the individual remained unknown to the police.

²⁹ Case refers to an individual caught trapping without a general licence in Ghaxaq. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

³⁰ Cases refer to two individuals found trapping on two unregistered trapping sites in Dingli and Birzebbuga. The police seized all trapping paraphernalia and finches and initiated legal action against the individuals.

³¹ Cases refer to two individuals caught trapping without a general licence in Ħal-Far. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individuals.

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
															1 Trapping on unregistered site ³²			
30/10/2022	38	9	40	11	3	1	7	2	6	2	1	2	3	1	2 Trapping on unregistered sites ³³	2 Trapping on unregistered sites ³⁴	2 Court action	0 Court action
31/10/2022	36	13	37	12	4	2	1	2	7	5	5	1	2	3	1 Trapping without a general licence ³⁵ 1 Trapping on unregistered site ³⁶		2 Court action	
01/11/2022	41	12	41	12	6	1	7	4	2	2	7	2	5	3	1 Trapping without a general licence ³⁷ 2 Trapping on unregistered sites ³⁸		1 Court action	
02/11/2022	36	15	38	13	5	1	3	4	6	8	8	4	1	3	3 Trapping on unregistered sites ³⁹		3 Court action	
03/11/2022	42	9	41	8	9	2	8	4	2	9	2	1	3	2	1 Trapping on unregistered site ⁴⁰		1 Court action	

³² Case refers to an individual found trapping on an unregistered trapping site in Siggiewi. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

³³ Cases refer to two individuals found trapping on unregistered trapping sites in Siggiewi. The police seized all trapping paraphernalia and finches and initiated legal action against the individuals.

³⁴ Cases refer to the discovery of two unregistered and unattended trapping sites in Gozo. The police seized all trapping paraphernalia and finches however no further legal action could be taken since the individuals remained unknown to the police.

³⁵ Case refers to an individual caught trapping without a general licence in Mġarr. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

³⁶ Case refers to an individual found trapping on an unregistered trapping site in Żejtun. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

³⁷ Case refers to an individual caught trapping without a general licence in Bormla. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

³⁸ Cases refer to the discovery of two unregistered and unattended trapping sites in Dingli. The police seized all trapping paraphernalia and finches however no further legal action could be taken since the individuals remained unknown to the police.

³⁹ Cases refer to three individuals caught trapping on three unregistered sites in Rabat, Mqabba and Marsaxlokk. The police seized all trapping paraphernalia and finches and initiated legal action against the individuals.

⁴⁰ Case refers to an individual found trapping on an unregistered site in Marsaskala. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
04/11/2022	36	14	37	13	7	2	4	3	5	10	3	7	4	1	1 Trapping on unregistered site ⁴¹ 1 Trapping without a general licence ⁴²		2 Court action	
05/11/2022	35	13	38	13	1	1	2	2	3	5	6	2	3	5	2 Trapping on unregistered sites ⁴³		2 Court action	
06/11/2022	40	13	40	14	5	4	5	2	7	9	3	1	2	4				
07/11/2022	39	15	42	13	4	2	5	2	1	2	2	6	7	3				
08/11/2022	35	14	38	12	9	2	2	2	6	8	3	1	4	2	1 Trapping on unregistered site ⁴⁴ 1 Trapping without a general licence ⁴⁵		2 Court action	
09/11/2022	36	14	38	12	8	1	4	8	3	7	4	4	6	3	3 Trapping on unregistered sites ⁴⁶		4 Court action	

⁴¹ Case refers to an individual found trapping on an unregistered site in Żurrieq. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

⁴² Case refers to an individual caught trapping without a general licence in Rabat. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

⁴³ Cases refer to two individuals found trapping on unregistered sites in Siġġiewi and Marsaskala. The police seized all trapping paraphernalia and finches and initiated legal action against the individuals.

⁴⁴ Case refers to an individual found trapping on an unregistered site in Birżebbuġa. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

⁴⁵ Case refers to an individual caught trapping without a general licence in Luqa. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

⁴⁶ Cases refer to three individuals found trapping on unregistered sites in Ta' Qali, Selmun and Dingli. The police seized all trapping paraphernalia and finches and initiated legal action against the individuals.

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
															1 Trapping without a general licence ⁴⁷			
10/11/2022	37	14	39	14	7	3	2	2	4	6	3	2	3	1	1 Trapping on unregistered site ⁴⁸		0 Court action	
11/11/2022	36	14	39	12	3	3	4	3	9	8	4	2	4	2	4 Trapping on unregistered sites ⁴⁹		4 Court action	
12/11/2022	36	15	39	12	2	1	10	7	2	3	3	2	4	4	3 Trapping on unregistered sites ⁵⁰		3 Court action	
13/11/2022	42	11	42	12	2	2	3	5	5	2	7	5	8	3				
14/11/2022	36	13	41	12	4	5	3	9	9	11	3	2	1	1				
15/11/2022	36	15	39	12	3	2	9	5	5	12	6	2	3	3	1 Trapping on unregistered site ⁵¹		1 Court action	
16/11/2022	37	16	40	12	7	5	11	8	13	5	2	2	5	1				

⁴⁷ Case refers to an individual caught trapping without a general licence in Dingli. The police confiscated all trapping paraphernalia and finches and initiated legal action against the individual.

⁴⁸ Case refers to the discovery of an unregistered and unattended trapping site in Siġġiewi. The police seized all trapping paraphernalia however no further legal action could be taken since the individual remained unknown to the police.

⁴⁹ Cases refer to four individuals found trapping on unregistered sites in Naxxar, Birżebbuġa and Żurrieq. The police seized all trapping paraphernalia and finches and initiated legal action against the individuals.

⁵⁰ Cases refer to three individuals found trapping on unregistered sites in Mellieħa and Rabat. The police seized all trapping paraphernalia and finches and initiated legal action against the individuals.

⁵¹ Case refers to an individual found trapping on an unregistered site in Birżebbuġa. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
17/11/2022	36	15	40	10	3	4	9	5	7	8	7	1	4	3				
18/11/2022	35	13	39	10	2	8	4	9	3	5	5	3	1	3				
19/11/2022	35	14	40	10	3	4	3	8	3	4	7	4	4	3	1 Trapping on unregistered site ⁵²		0 Court action	
20/11/2022	37	14	40	12	7	6	7	8	3	3	2	4	4	2				
21/11/2022	36	15	39	13	6	2	4	9	4	2	2	2	5	3				
22/11/2022	39	14	41	12	2	4	9	7	5	9	5	4	3	1				
23/11/2022	37	13	41	10	2	6	7	8	4	3	5	2	1	5				
24/11/2022	43	11	40	9	4	2	7	5	6	2	6	3	2	2				
25/11/2022	36	15	37	13	2	1	9	3	5	4	3	3	2	1				

⁵² Case refers to the discovery of an unregistered and unattended trapping site in Qormi. The police seized all trapping paraphernalia and finches however no further legal action could be taken since the individual remained unknown to the police.

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
26/11/2022	38	11	37	13	3	5	1	4	3	6	2	3	4	1				
27/11/2022	36	15	38	14	1	1	6	6	4	6	2	1	1	3				
28/11/2022	35	14	40	10	4	3	3	5	6	9	2	1	4	2				
29/11/2022	37	13	41	10	3	1	3	4	6	6	1	2	3	2				
30/11/2022	36	15	39	11	6	1	4	3	2	7	1	5	2	2				
01/12/2022	38	13	40	9	4	2	5	7	2	6	1	3	3	1				
02/12/2022	44	10	40	11	3	3	5	5	6	2	1	2	4	1				
03/12/2022	36	14	41	10	2	1	9	2	7	4	10	3	3	2				
04/12/2022	35	15	40	10	2	2	5	6	9	3	2	2	2	1				

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
05/12/2022	38	14	37	14	6	2	6	3	3	3	3	1	4	2				
06/12/2022	36	15	36	15	5	2	1	4	4	4	3	4	1	3				
07/12/2022	39	14	39	12	3	4	5	1	9	3	1	3	2	2				
08/12/2022	38	12	41	13	4	3	2	3	7	3	1	1	1	1				
09/12/2022	37	13	39	10	3	2	5	2	5	2	2	1	1	1				
10/12/2022	36	13	38	13	4	4	7	3	2	3	1	3	3	1				
11/12/2022	34	17	42	9	3	1	3	6	4	2	2	2	2	2				
12/12/2022	39	10	40	10	6	5	5	1	6	1	3	2	3	1				
13/12/2022	34	15	36	14	5	1	6	14	2	2	1	2	1	4				

Date	Number of officers deployed 0500hrs-1500hrs (EPU / District / AFM)		Number of officers deployed 1500hrs-2100hrs (EPU / District / AFM)		Number of spot-checks on individual per region										Offences detected (number of cases and nature of offence)		Number of persons charged, and action taken	
	Malta	Gozo	Malta	Gozo	Malta Region 5	Malta Region 6	Malta Region 7	Malta Region 8	Malta Region 9	Malta Region 10	Gozo Region 1	Gozo Region 2	Gozo Region 3	Gozo Region 4	Malta	Gozo	Malta	Gozo
14/12/2022	36	15	37	12	5	2	5	6	6	3	1	2	5	1				
15/12/2022	34	15	41	11	6	3	6	4	4	6	3	1	1	2	1 Trapping on unregistered site ⁵³		1 Court action	
16/12/2022	34	14	35	14	3	1	2	2	6	3	3	1	1	1				
17/12/2022	36	15	34	15	4	2	3	3	2	6	4	2	1	1				
18/12/2022	38	12	39	15	3	1	2	2	4	3	2	1	3	1				
19/12/2022	36	12	38	15	2	3	7	5	3	9	2	2	1	4				
20/12/2022	38	13	39	10	2	2	3	4	2	4	1	2	2	4				
	Average																	
	37	13	39	12	264	129	294	281	297	300	203	162	186	149	56 ⁵⁴	3 ⁵⁵	50 ⁵⁶	0 ⁵⁷

⁵³ Case refers an individual found trapping on an unregistered site in Birzebbuga. The police seized all trapping paraphernalia and finches and initiated legal action against the individual.

⁵⁴ Six cases of unknown individuals, 50 cases of known individuals.

⁵⁵ 3 cases of unknown individuals.

⁵⁶ All court actions.

⁵⁷ No court actions.

9.9 During patrols and spot-checks, the Malta Police Force ensured strict supervision of the derogation throughout the research period. Field inspectors were responsible for monitoring compliance with the special licence conditions and with all applicable legal requirements, namely:

- verifying that the licensees were in possession of all requisite documents;
- verifying that the birds are being immediately released following control (through covert observations and spot-checks on individual licensees);
- ensuring compliance with date and time restrictions;
- ensuring that no species other than those that could be controlled under the finch research licence were being targeted;
- verifying that the licensee's research station was approved for that purpose by the Wild Birds Regulation Unit (i.e., visible on the portable GIS tablets) and that it contained not more than a pair of horizontal clap-nets from a hide with each net having an area not larger than thirty-eight square metres, as well as verification that the mesh size was not less than 18mm x 18mm;
- inspecting live-decoys present on site; and
- compliance with the provisions of the Conservation of Wild Birds Regulations) and other applicable legislation.

9.10 To facilitate the conduct of their duties, enforcement officers had 18 vehicles at their disposal. All vehicles were equipped with radio communication facilities to enable contact with police officers from other sections/districts, and to allow continuous liaison and coordination with the police headquarters. Police officers were also equipped with binoculars to facilitate their investigations.

9.11 Patrolling officers were also provided with portable tablet computers with mobile internet for access to enforcement web-based GIS, a pre-installed

GIS as back-up in case mobile internet access was not possible in any specific location, as well as GPS link capability and geo-tagging photography capability. 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. The GIS component included the corresponding clap-nets that were registered on each licensee (or groups of licensees in case of shared clap-nets) for 2022. This facilitated the immediate identification of any person not in possession of the requisite licence or whether the licensee is practising research on an authorised clap-net pair.

- 9.12 During the research period, the Wild Birds Regulation Unit provided the police with technical support, confirmation of licences, details on research stations, technical assistance regarding inspection of seized birds, technical guidance in relation to enforcement of cases and legal assistance as required.

Infringements detected

- 9.13 During the patrols and spot-checks carried out by police throughout the finch research derogation period, a total of 59 infringements related to this derogation were detected (Table 12). Court action was taken against 50 individuals, 18 for trapping without a general or special licence, 31 cases of trapping on unregistered sites, and a person for the possession of unmarked or incorrectly marked decoys. No legal action could be taken in relation to the other nine illegalities since the persons involved were making use of unregistered sites (no traceability) and were not present at the time of the inspection, thus rendering identification of the perpetrators extremely difficult, which, in turn, renders futile any attempt to press charges and secure a conviction. Charges can only be issued on the individual as opposed to "the occupier" or "the land owner". The nature of all disclosed infringements during the derogation period is outlined in Table 13 below.

TABLE 13 OFFENCES DISCLOSED DURING THE FINCHES RESEARCH PERIOD

	2022		
	(20.10.22-20.12.22)		
	Cases in Malta	Cases in Gozo	Total number of cases
Illegal trapping of finches	0	0	0
Use of illegal means (e.g., cage traps; artificial light; vertical nets; decoys of protected birds)	0	0	0
Trapping using nets of prohibited mesh size	0	0	0
Trapping during prohibited hours	0	0	0
Trapping within bird sanctuaries	0	0	0
Trapping on unregistered sites	36	3	39
Trapping using unmarked or incorrectly marked decoys	1	0	1
Trapping without licence (general or special licence)	18	0	18
Unattended Trapping site	1	0	1
Illegal possession of finches without required rings	0	0	0
Total	56	3	59
Number of persons apprehended	50	0	50

9.14 The following table lists birds confiscated by police during the autumn 2022 finch research period. All confiscated birds were checked and birds that were legally possessed under the terms of the derogation (such as finches fitted with genuine R16U rings and captive bred birds fitted with a genuine closed ring) were returned to the owner, the rest were seized. Legal action has been initiated in all cases where the culprit has been identified and charged, as already detailed above.

TABLE 14 BIRDS SEIZED DURING THE AUTUMN 2022 FINCH RESEARCH DEROGATION

Species	Number of birds confiscated by the authorities		Number of birds found compliant with the derogation	Number of birds in violation of the finches research derogation
	Malta	Gozo		
Common Linnet <i>Linaria cannabina</i>	93	4	3	94
Common Chaffinch <i>Fringilla coelebs</i>	173	8	0	181

European Greenfinch <i>Chloris chloris</i>	89	7	14	82
Eurasian Siskin <i>Spinus spinus</i>	142	16	0	158
European Goldfinch <i>Carduelis carduelis</i>	7	0	0	7
European Serin <i>Serinus serinus</i>	27	0	0	27
Hawfinch <i>Coccothraustes coccothraustes</i>	44	1	5	40
Subtotal	575	36	22	589
Total	611		22	589

9.15 Before the opening of the finch research derogation period (from 1 September 2022), police found 20 illegal trapping-related infringements, 14 in Malta and six in Gozo. The cases in Malta consisted of five unattended trapping sites of unknown culprits and nine cases of individuals caught illegally trapping for finches. Police seized all trapping paraphernalia including nets, pre-recorded bird callers and various finches and initiated legal action against them. The six cases in Gozo include two incidences of illegal trapping of finches where police seized all trapping paraphernalia and initiated legal action against two individuals, and another four unattended trapping sites of unknown culprit.

9.16 Following closure of the finch research period, in Malta, no illegalities were found related to illegal trapping for finches. During the same period, in Gozo, police found two unattended trapping sites of unknown owners which led to the seizure of all trapping paraphernalia, but the culprits remained unknown to the police.

10. CONCLUSIONS

10.1 The application of an Article 9(1)(b) research derogation to determine Malta's reference population of the seven finch species was preceded by a series of in-depth analyses that considered all relevant legal and technical aspects.

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

- the study design and methodology will provide the only satisfactory solution to attaining the stated objective of the derogation regime—to

collect data on finches ring recoveries at the national level to determine the countries of origin of the seven finch species during their post-nuptial (autumn) migration over Malta and to subsequently use the improved knowledge base to inform policy on the protection of these species and their habitats at the flyway level;

- the derogation satisfies all the parameters of the Birds Directive, and, in particular, fulfils (exceeds) all the criteria stipulated in Article 9 of the Directive for research derogations, not least the absence of another satisfactory solution to achieve the required objectives; and
- the actual implementation of the derogation on the ground ensures that the relevant legal parameters are respected in the field through an elaborate and robust enforcement regime and systematic spot-checks.

10.3 The Maltese authorities have subsequently ensured that the above prerequisites were met. After ascertaining that there is no other satisfactory solution other than the application of this strictly controlled research derogation, the authorities put in place a robust regulatory regime that ensured that this scientific study would shed more light on the origin of the seven finch species migrating over the Maltese Islands.

10.4 Supervision on the ground was ensured through deployment of appropriately trained and suitably equipped field officers that have exponentially increased the intensity of field inspections in comparison with similar derogations during the previous three years. The use of latest state-of-the-art technology (GIS, GPS and portable tablet PCs) has resulted in a greater efficiency of the overall supervision process. This was aided further by very high levels of legal deterrents against wildlife crime in force since 2014, regulatory rigour (e.g., pre-screening, registration and digitalization of all site plans), and ongoing efforts at promoting education and regulatory awareness.

10.5 The number of finches successfully 'controlled' through this research derogation confirms that the current data gap can be effectively filled by the use of the clap-net system and the involvement of persons with vast experience in the operation of such methods. The results further confirm that the mist-net system used by bird-ringers is not a satisfactory

solution for the collation of data to assess Malta's reference population of the seven finch species.

- 10.6 Considering that the Court of Justice of the European Union in its judgment in case C-557/15 declared that 53 ring recoveries for Common Linnet do not provide scientific certainty on the reference population of this species, it follows that for all the seven finch species, scientific certainty can only be obtained if the total number of ring recoveries from other EU Member States exceeds 53 per species. The Maltese authorities believe that scientific certainty can be achieved when the sample size is in the region of 70 ring recoveries for each species if and only if additional ring recoveries beyond the 60-threshold do not provide insight into new regions not previously recorded. In other words, data saturation may be reached at a threshold of 60 ring recoveries per species. The additional foreign ring recoveries recorded since the 2020 research derogation are still deemed insufficient in this regard. Thus, additional ring recoveries are still considered necessary to attain scientific certainty in order to answer the research question.