



## UPDATE on illegal bird trapping activity in Cyprus

Covering the spring 2016 findings of BirdLife Cyprus' continuing monitoring programme for illegal bird trapping in Cyprus and providing an overview of the latest developments regarding the problem

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## Περίληψη

Η παρούσα αναφορά παρουσιάζει τα τελευταία ευρήματα του συνεχόμενου και συστηματικού προγράμματος παρακολούθησης της παράνομης παγίδευσης πουλιών του Πτηνολογικού Συνδέσμου Κύπρου για την άνοιξη 2016, ενώ παράλληλα κάνει και μια ανασκόπηση της κατάστασης που επικρατεί για αυτό το θέμα στο νησί. Η αναφορά αυτή έχει ως κύριο στόχο τους υπεύθυνους στα κέντρα λήψης αποφάσεων και τους πολιτικούς, με σκοπό την ενημέρωση, την ευαισθητοποίηση και την κινητοποίηση για πιο αποτελεσματική δράση για αντιμετώπιση αυτού του χρόνιου και επίμονου οικολογικού προβλήματος.

Η ανάλυση των καταγραφών από την έρευνα πεδίου με το πρόγραμμα TRIM έδειξε μια μείωση της τάξης του 95% για την παγίδευση με δίχτυα για την άνοιξη 2016, σε σύγκριση με την άνοιξη 2007. Αυτή η τάση μειωμένων ανοιξιάτικων επιπέδων παγίδευσης, σε σύγκριση με τα επίπεδα όταν ξεκίνησε η ανοιξιάτικη παρακολούθηση της παγίδευσης, έχει παρατηρηθεί τα τελευταία χρόνια. **Τα επίπεδα αυτά είναι τα χαμηλότερα που καταγράφηκαν για την ανοιξιάτικη περίοδο από το 2007, ένα πολύ ενθαρρυντικό αποτέλεσμα.** Εντούτοις, τα επίπεδα αυτά δεν μπορούν να δώσουν τη συνολική εικόνα της κατάστασης της παγίδευσης πουλιών στην Κύπρο – χαμηλά επίπεδα παγίδευσης παρατηρήθηκαν και τις περιόδους άνοιξης 2012-2015, ενώ τις ίδιες χρονιές τα επίπεδα παγίδευσης που καταγράφηκαν στις κύριες περιόδους φθινοπωρινής παγίδευσης έδειξαν μια πολύ ανησυχητική εικόνα. **Ο Πτηνολογικός Σύνδεσμος Κύπρου θα παραμείνει επιφυλακτικός μέχρι το φθινόπωρο 2016, το οποίο αποτελεί πιο αξιόπιστη ένδειξη της συνολικής κατάστασης της παγίδευσης πουλιών στην Κύπρο.** Η ανάλυση των καταγραφών στο πρόγραμμα TRIM έγινε σε συνεργασία με την RSPB (εταίρος του BirdLife International στο Ηνωμένο Βασίλειο).

Όσον αφορά την πάταξη για την περίοδο της άνοιξης 2016, με βάση τα στοιχεία που έχει ο Πτηνολογικός Σύνδεσμος Κύπρου στη διάθεση του, ήταν ξεκάθαρο ότι το Κλιμάκιο Πάταξης Λαθροθηρίας της Αστυνομίας Κύπρου ήταν το πιο ενεργό και αποτελεσματικό σε σχέση με την πάταξη κατά της παράνομης παγίδευσης πουλιών, ακολουθώντας το Κλιμάκιο Πάταξης Λαθροθηρίας της Αστυνομίας των Βρετανικών Βάσεων. Όσον αφορά την Υπηρεσία Θήρας και Πανίδας, είναι ατυχές ότι η συγκεκριμένη διωκτική αρχή έχει μειώσει την πάταξη της στο πεδίο χρόνο με το χρόνο – με βάση τα στοιχεία πάταξης που είναι διαθέσιμα στον Πτηνολογικό – παρόλο που είναι η κατεξοχήν αρμόδια αρχή για την εφαρμογή και την επιβολή της Οδηγίας για τα Πουλιά, συμπεριλαμβανομένου και της πάταξης κατά της παράνομης παγίδευσης πουλιών και της λαθροθηρίας.

Παρόλα τα θετικά ευρήματα από τις καταγραφές στο πεδίο και τα χαμηλά επίπεδα παγίδευσης για την άνοιξη 2016, οι διάφορες εξελίξεις που τρέχουν σχετικά με το θέμα της παράνομης παγίδευσης πουλιών είναι πιθανόν να χειροτερεύσουν την κατάσταση, σε μια περίοδο όπου η Κύπρος έχει αναγνωριστεί ως μια από τις χειρότερες περιοχές εν σχέση με την παράνομη θανάτωση πουλιών κατά μήκος του αποδημητικού διαδρόμου μεταξύ της Αφρικής και της Ευρώπης στην περιοχή της Μεσογείου (BirdLife International, Μάρτιος 2016).

Η πολιτική βούληση της Κυπριακής Κυβέρνησης για να αντιμετωπίσει αυτό το ζήτημα φαίνεται ανύπαρκτη, και παρά τις πάμπολλες εκκλήσεις και προειδοποιήσεις της Ευρωπαϊκής Επιτροπής για αφαίρεση του 'εναλλακτικού σχεδιασμού' από το εγκεκριμένο Στρατηγικό Σχέδιο, η Κυπριακή Κυβέρνηση δεν έχει δείξει καμία πρόθεση για να το πράξει. Επιπλέον, έχει κατατεθεί από την Υπηρεσία Θήρας και Πανίδας για συζήτηση και ψήφιση στην Κυπριακή Βουλή ένα τροποποιητικός

νόμος του Νόμου 152/2003 'Περί της Προστασίας και Διαχείρισης Αγρίων Πτηνών και Θηραμάτων Νόμος', για τον οποίο ο Πτηνολογικός Σύνδεσμος Κύπρου πιστεύει ότι εισάγονται μια σειρά από χαλαρώσεις και κενά στην υφιστάμενη νομοθεσία και σε περίπτωση που υιοθετηθούν αυτές οι προτάσεις ουσιαστικά θα κάνουν αναποτελεσματική την πάταξη.

Όσον αφορά τη δέσμευση της Διοίκησης των Βρετανικών Βάσεων για συνέχιση του προγράμματος αφαίρεσης ακακιών στην περιοχή του Κάβο Πύλα, μιας περιοχής όπου διενεργείται παγίδευση με δίκτυα σε μεγάλη κλίμακα, η Διοίκηση προγραμματίζει να προχωρήσει σε περαιτέρω αφαίρεση ακακιών τον Ιούλιο 2016. Ωστόσο, υπήρξαν αντιδράσεις από την τοπική κοινότητα της Ξυλοφάγου, με την υποστήριξη ντόπιων πολιτικών και Βουλευτών, διαμαρτυρόμενοι ότι η Διοίκηση αφαιρεί το δάσος των ακακιών. Δυστυχώς η προγραμματισμένη αφαίρεση ακακιών αναβλήθηκε μετά από όλες τις αντιδράσεις των ντόπιων, κάτι που ο Πτηνολογικός θεωρεί ως ένα σημαντικό πισωγύρισμα αναφορικά με την πρόοδο του προγράμματος αφαίρεσης ακακιών.

Ο Πτηνολογικός Σύνδεσμος Κύπρου κάνει έκκληση προς την Κυπριακή Κυβέρνηση για την αφαίρεση του 'εναλλακτικού σχεδιασμού' από το Στρατηγικό Σχέδιο, όπως έχει ζητήσει ξεκάθαρα και η Ευρωπαϊκή Επιτροπή από την Κυβέρνηση στη τελευταία Συνάντηση Δέσμη που έγινε το Φεβρουάριο 2016. Επιπλέον, ο Πτηνολογικός καλεί την Κυπριακή Βουλή, και ιδιαίτερα τα μέλη της Κοινοβουλευτικής Επιτροπής Περιβάλλοντος, όπως απορρίψουν τις καταστροφικές προτάσεις που έχει συμπεριλάβει η Υπηρεσία Θήρας και Πανίδας στο τροποποιητικό νόμο του Βασικού Νόμου 152/2003. Τέλος ο Πτηνολογικός κάνει έκκληση προς τη Διοίκηση των Βρετανικών Βάσεων όπως εντείνουν και αρχίσουν ξανά το πρόγραμμα αφαίρεσης ακακιών στο Κάβο Πύλα - ο Πτηνολογικός πιστεύει ότι η επόμενη φάση αφαίρεσης ακακιών θα πρέπει να πραγματοποιηθεί πριν το τέλος του 2016, προκειμένου να αποφευχθεί οποιαδήποτε περαιτέρω οπισθοδρόμηση σε σχέση με την όλη προσπάθεια και πρόοδο για να σταματήσει η βιομηχανοποιημένη, μεγάλης κλίμακας παγίδευση πουλιών που γίνεται στο Κάβο Πύλα.

Η αναφορά χωρίζεται στα ακόλουθα κεφάλαια:

- Κεφάλαιο 1 παρουσιάζει μια σύνοψη της παγίδευσης πουλιών στην Κύπρο, δίνει κάποια ιστορικά στοιχεία αυτής της δραστηριότητας, κάνει αναφορά στην εθνική νομοθεσία όσον αφορά την προστασία των πτηνών και παρουσιάζει την τρέχουσα κατάσταση,
- Κεφάλαιο 2 παρουσιάζει το πρόγραμμα παρακολούθησης του Πτηνολογικού Συνδέσμου Κύπρου,
- Κεφάλαιο 3 παρουσιάζει τα αποτελέσματα της έρευνας πεδίου και την ανάλυση από το πρόγραμμα TRIM, τα στοιχεία από τις προσπάθειες πάταξης των αρμοδίων αρχών και το πολιτικό και κοινωνικό κλίμα που επικρατεί, και,
- Κεφάλαιο 4 είναι η συζήτηση, όπου γίνεται μια σύνοψη της κατάστασης της παράνομης παγίδευσης πουλιών και της πολιτικής βούλησης γύρω από το θέμα.

Τα έξοδα για την εργασία πεδίου του Πτηνολογικού (καύσιμα αυτοκινήτου κτλ), καθώς και τα έξοδα των εκάστοτε εθελοντών, καλύφθηκαν από την οργάνωση NABU (εταίρος του BirdLife International στη Γερμανία), ενώ το RSPB (εταίρος του BirdLife International στο Ηνωμένο Βασίλειο) κάλυψε τους μισθούς.

## Summary

This report presents the latest findings of the on-going and systematic BirdLife Cyprus surveillance programme on illegal bird trapping, relating to the spring 2016 season, while also providing an overview of the current climate regarding this issue on the island. This report is aimed mainly at top decision makers and politicians, with the aim of informing, raising awareness and generating momentum for more effective action to tackle this chronic and persistent ecological problem.

The TRIM analysis of the survey data showed that mist netting activity for spring 2016 decreased by 95% compared to spring 2007, in line with the general pattern of recent years of much lower spring trapping levels compared to when the spring monitoring began. **These are the lowest levels of spring trapping recorded since 2007, a very encouraging outcome indeed.** However these levels cannot be taken as a reliable barometer of the trapping situation in Cyprus – low trapping activity was observed during springs 2012 – 2015, only to be followed by very high trapping activity levels during the main autumn trapping seasons. **BirdLife Cyprus will remain cautious until the autumn 2016, which is a far more reliable indicator of the overall bird trapping situation in Cyprus.** The TRIM analysis of the survey data was undertaken in cooperation with RSPB (partner of BirdLife International in the UK).

With regards to enforcement action for spring 2016, based on the data made available to BirdLife Cyprus, it was clear that the Cyprus Police APU was the most active and effective agency in terms of enforcement against illegal bird trapping, followed by the SBA Police APU. Regarding the Game and Fauna Service, it is unfortunate that this enforcement agency has reduced its enforcement action year on year – this is based on the enforcement statistics available to BirdLife Cyprus - although it is the main competent authority responsible for the implementation and enforcement of the Birds Directive, which includes also enforcement on illegal bird trapping and poaching.

Despite the positive findings on the ground regarding low spring 2016 trapping activity levels, the various developments taking place in relation to the illegal bird trapping issue may lead to a worsening of the situation, at a time that Cyprus have been identified as one of the key blackspots for illegal bird killing along the Africa-Eurasia bird migratory flyway in the Mediterranean sea (BirdLife International, March 2016).

The political will of the Cyprus Government to tackle this issue appears non-existent, and despite the numerous warnings of the European Commission to remove the ‘alternative plan’ from the approved Strategic Plan, the Cyprus Government has shown no intention of doing so. Furthermore a law amendment to the Law 152/2003 on ‘The Protection and Management of Wild Birds and Game Species’ was prepared by the Game and Fauna Service and has been brought to the Cyprus Parliament for discussion and voting, an amendment that BirdLife Cyprus believes that it would introduce a series of relaxations and loopholes in the existing legislation and would essentially make enforcement ineffective, if these proposals were to be adopted.

With regards to the commitment of the SBA Administration to continue with its acacia removal programme in the mist netting hotspot of Cape Pyla, the SBAA was planning to undertake further acacia cutting in July 2016. However this was faced with opposition from the local Xylofagou community, supported from local politicians and Members of the Parliament, protesting that the SBAA is removing the acacia forest. Unfortunately the planned acacia removal was put on hold after all the

local opposition, which BirdLife considers a major setback to the progress of the acacia removal programme.

BirdLife Cyprus calls upon the Cyprus Government to remove the 'alternative plan' from the Strategic Action Plan, in line with what the European Commission had clearly asked the Government to do so in the last Package Meeting held in February 2016. Furthermore BirdLife calls upon the Cyprus Parliament, in particular the Members of the Environmental Committee, to reject the catastrophic proposals that the Game and Fauna Service has included in the law amendment to the Law 152/2003. Finally BirdLife calls upon the SBA Administration to step up and to commence again with its acacia removal programme in Cape Pyla - BirdLife Cyprus believes that the next phase of acacia removal should take place before the end 2016 in order to avoid any further setback with regards to making real progress in stopping industrial scale bird trapping in Cape Pyla.

The report is separated into the following sections:

- Section 1 provides an overview of the bird trapping in Cyprus, gives some historical background to this activity, makes reference to the national legislation regarding bird protection and presents the current situation,
- Section 2 describes the historical outline of the surveillance programme of BirdLife Cyprus,
- Section 3 presents the survey data from the monitoring programme and the analysis from the TRIM software, summarises the enforcement data of the competent authorities and gives an outline of the political and social attitudes regarding this issue, and
- Section 4 is the discussion, giving an overview of the illegal bird trapping situation and the political will around this issue.

All the running costs for the field work (car fuel etc.), as well as all the volunteer costs were covered by NABU (BirdLife in Germany), while the RSPB covered related salaries.

# 1. Overview of bird trapping in Cyprus

Bird trapping in Cyprus has been illegal since 1974, when legislation on hunting was introduced with Law 39/74 'Protection and Development of Game and Wild Birds Law of 1974 (39/1974)' and non-selective methods such as mist nets, limesticks and traps and the trade of wild birds were prohibited<sup>1</sup>. Moreover, in 1988 Cyprus ratified the 1979 Bern Convention on the Conservation of European Wildlife and Natural Habitats, adopting a long list of birds as protected, including the Blackcap (*Sylvia atricapilla*), hence prohibiting the killing (hunting) and consumption of blackcaps (blackcaps are the main target species of illegal bird trapping in Cyprus). With Cyprus joining the EU, EU Birds Directive (2009/147/EC, formerly 79/409/EEC) was transposed into Cyprus Law N. 152(I)/2003, prohibiting anew the use of non-selective methods including mist nets, limesticks and calling devices, as well as the possession of trapping equipment, trapped birds and the trading and eating of trapped birds.

Historically, trapped birds – mostly Blackcaps - were a food supplement for the mostly poor island inhabitants living off the land. The practice of bird trapping in Cyprus has been recorded in historical documents from the Middle Ages and even earlier times. Trapping as practiced in Cyprus today bears no relation to the 'traditional' or historical situation.

Nowadays, bird trapping in Cyprus is widespread and extensive, contributing to the large scale killing of hundreds of thousands of migratory and wintering birds, and survey records show that 153 bird species have been found trapped in mist nets or limesticks, of which 78 are species of European conservation concern according to BirdLife International<sup>2</sup>. This is a clear indication of the non-selective nature of these methods. This illegal activity has become a profitable business which is controlled to a large extent by the 'big' trappers who are also involved in organised crime, and the Cyprus Game & Fauna Service estimated this illegal business to be valued in the order of 15 million euros per year<sup>3</sup>.

Apart from the extensive use of non-selective methods for illegal bird trapping in Cyprus, organised trappers nowadays use calling devices that have imitating calls of migratory birds. These calling devices are normally played during night-time, luring the birds into the trapping sites and hence increasing the catch for each trapper. Academic studies have shown that tape luring can increase the probability of birds being caught from 3 to 13 times (Schaub M. *etal*, 1999) and that various species are attracted by song playback, including target species for the trappers such as Eurasian reed warblers, sedge warblers, garden warblers, blackcaps and grasshopper warblers (Mukhin A. *etal*, 2008). The field report for Autumn 2013 of the Committee Against Bird Slaughter (CABS, March 2014, pages 7 & 18) highlighted the extensive use of calling devices and their intensity (in terms of loudness)

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<sup>1</sup> The specific articles of Law 39/1974 that prohibited the trapping and trade of wild birds include: Article 10 ('prohibition of hunting etc. of certain bird species', without including the blackcap either in the protected or the game species), Article 14 ('prohibition of offering game or wild birds in restaurants etc.') and Article 15 ('prohibition of the use of light projectors, traps, luring methods, limesticks and flushing of birds).

<sup>2</sup> BirdLife Cyprus 'List of birds recorded trapped in mist nets and on limesticks', Latest update February 2016. [http://www.birdlifecyprus.org/upload/Trapping%20Docs/Consolidatedlistoftrappedbirds\\_FINAL153.pdf](http://www.birdlifecyprus.org/upload/Trapping%20Docs/Consolidatedlistoftrappedbirds_FINAL153.pdf).

<sup>3</sup> Game and Fauna Service (17<sup>th</sup> March 2010), Position paper presented at the Committee of Environment of the Cyprus House of Parliament during a discussion to change the legislation on the protection and management of wild birds and game species

within the trapping areas during night time, which are often heard easily from hundreds of metres away from each trapping site.

This report presents the latest survey results for spring 2016, when trappers are after migratory birds, with the main target species being blackcaps (*Sylvia atricapilla*) and other migrant songbirds. Trapped birds are either served as expensive *ambelopoulia* 'delicacies' in local restaurants or are used for home consumption.



## 2. Surveillance programme of BirdLife Cyprus

BirdLife Cyprus is a non-profit NGO working for the protection and conservation of birds, their habitats and wider biodiversity, and is the Partner of BirdLife International in Cyprus. With support from the RSPB (BirdLife partner in the UK), BirdLife Cyprus has undertaken a systematic surveillance programme of illegal bird trapping in Cyprus since autumn 2002, providing a long record of trapping activity and giving the NGO a very good measure of expertise on the issue. The surveillance programme follows a 'Bird Trapping Monitoring Protocol' that was developed by BirdLife Cyprus and the RSPB, in consultation with the Cyprus Game & Fauna Service and the British Sovereign Base Area (SBA) police at the start of the programme. Figure 1 shows a map where bird trapping takes place in Cyprus; monitoring is concentrated in the two areas (numbered 1 and 2) where extensive trapping takes place:

1. Kokkinochoria area (Eastern Larnaca/Famagusta area) – this area also includes the Dhekelia Eastern Sovereign Base (ESBA) area), and
2. Ayios Theodoros and Maroni area (Western Larnaca).



**Figure 1 Map of Cyprus showing the main trapping areas**

Although trapping is also an issue in other areas of Cyprus, the survey efforts focus on these two main areas due to resource limitations and because they hold the highest trapping activity. The monitoring is undertaken by visiting a random selection of sample squares (1 km<sup>2</sup>) during daytime hours, with a focus on detecting mist netting activity. Limesticks are recorded if they are found while searching for mist nets. The squares selected are stratified to ensure a representative coverage of areas under SBA administration and the Republic of Cyprus. For more details on the methodology of BirdLife Cyprus read Appendix 1.

The project is undertaken in close co-operation with the competent authorities of the Republic of Cyprus (the Game & Fauna Service and the Cyprus Police Anti-poaching unit) and the SBA Police. When trapping paraphernalia and activity is found, the BirdLife Cyprus team immediately contacts the

relevant enforcement authorities. It should be noted that the BirdLife Cyprus observers never confront suspected trappers and never remove trapping paraphernalia.

BirdLife Cyprus would like to express its particular thanks to the RSPB (BirdLife in the UK) for supporting the project financially since the beginning. Furthermore BirdLife Cyprus would like to thank NABU (BirdLife in Germany) for its financial support from 2013 onwards. NABU covers the running costs and volunteer costs of the surveillance programme, whereas the RSPB covers related salaries.

### 3. Results

#### *Survey results and data analysis*

##### *Field survey data*

The field survey for spring 2016 was carried out during April and early May 2016 following the standard survey protocol. In total 40 squares were surveyed during this period and BirdLife Cyprus reported all trapping finds to the relevant enforcement authorities, either the SBA Police Anti-poaching Unit, or the Game & Fauna Service or the Cyprus Police Anti-poaching Unit, depending on the location of the finds.

A summary of the field data for spring 2016 is presented in Appendix 2. In total the findings of the survey included 120 metres of active net rides (these are cleared “runs” in acacia plantations or other habitats e.g. orchards, olive trees, either holding nets or where there was clear evidence of preparation for the setting and/or use of nets) and 1 mist net found *in situ* (either classified as Active Set Nets or Active Unset Nets<sup>4</sup>). Opportunistic checks outside the survey squares detected an additional 12 metres of active net rides (see Appendix 2).

The total length of active mist net rides within the 406 km<sup>2</sup> survey area (Larnaka - Famagusta and Ayios Theodoros – Maroni areas) can be extrapolated at nearly 1 km (120 m x 301 / 40)<sup>5</sup>.

In terms of limesticks, BirdLife Cyprus detected 4 limesticks this spring (last spring none were detected) during the field survey (see Appendix 2). However, as already explained BirdLife Cyprus does not focus its field survey on the detection of limesticks, as other organisations do. For example, during the spring 2016 camp of the Committee Against Bird Slaughter (CABS) / SPA Foundation which was undertaken from the 3<sup>rd</sup> April to 15<sup>th</sup> May, a total of 1,828 limesticks, 50 mist nets and 13 decoys were detected or seized (CABS report, July 2016). It is highlighted that the majority of the limesticks detected or seized during the CABS / SPA Foundation camp were in areas controlled by the Republic of Cyprus, and mainly in the Famagusta District.

Based on the data gathered in the field for spring 2016, BirdLife Cyprus estimates that about **7,000 birds could have been killed within the survey area** and just over 9,600 birds could have been killed across the whole of Cyprus<sup>6</sup>. It is noted that the estimated death toll does not take into consideration any net rides that have been classified as ‘Prepared’ (previously this net ride classification was also considered for the death toll estimation), following the recommendation included in a BTO report (July 2015) to revise slightly the equation<sup>7</sup> (read Appendix 3 for more details).

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<sup>4</sup> Active Set Net (ASN) is a net ride where the mist net is *in situ* and is set and ready for catching birds. Active Unset Net (AUN) is a net ride where the mist net is *in situ* but is furled i.e. the mist net is not stretched up for catching birds but lowered down.

<sup>5</sup> There are 301.1 km<sup>2</sup> squares in the survey area that are classified as suitable for trapping activity (on the basis of vegetation characteristics) and 59 of these squares were surveyed in Autumn 2015. Out of these 301.1 km<sup>2</sup> squares, 236 squares are found in the Republic areas and 65 are found in the Dhekelia SBA.

<sup>6</sup> The estimate also includes any bird trapping that takes place in the occupied parts of Cyprus, although trapping levels are relatively low based on information provided to BirdLife Cyprus by other organisations and our joint survey work in the occupied areas with the Turkish Cypriot bird protection society, KUSKOR, carried out in 2008. This is also the reason why the occupied areas are not presented as a main trapping area in Figure 1.

<sup>7</sup> BirdLife Cyprus organised a workshop with title ‘Methodology of surveying illegal bird trapping in Cyprus’ in July 2015 (read relevant [e-news article](#)). Independent science experts from the British Trust Ornithology (BTO) were

### ***Trends in autumn mist netting activity***

BirdLife Cyprus is undertaking the trend analysis using the TRIM program. The organisation has been gathering field data in a systematic manner since 2002 as part of its surveillance programme and hence makes it possible to use such programs for the analysis. BirdLife Cyprus would like to thank the RSPB senior conservation scientist, Mr Simon Wotton, for his help and support in undertaking the TRIM trend analysis.

TRIM (TREnds & Indices for Monitoring data) is a program for the analysis of time series of counts with missing observations. The program can be used to estimate indices and trends and to assess the effects of covariates on these indices and trends. TRIM analyses time series of counts, using Poisson regression and produces estimates of yearly indices and trends (Pannekoek & van Strien 2005). If observations are missing, TRIM estimates the missing values on the basis of changes observed on plots that were monitored.

In other words, TRIM enables us to use the data from all the trapping survey squares ever surveyed under the BirdLife Cyprus surveillance programme during the spring period, in total 107 squares, even though these squares were not all covered each spring season. The programme 'fills in' missing values for squares that were not covered in a particular year on the basis of the general trend derived from the data as a whole. The TRIM software (freely available from <http://www.ebcc.info/trim.html>) is very widely used for analysis of field data from ecological or biological studies. It works as an index, setting the first year of a time series of data the value of 100 (in this case year 2007) and then showing changes up or down in subsequent years relative to this value of 100.

The TRIM program was used to analyse the survey data and to produce trends in spring bird trapping from 2007 to 2016. The metres of net rides that are recorded as active<sup>8</sup> for bird trapping with mist nets within each survey square are used as the response variable, with autocorrelation and overdispersion accounted for as well. The TRIM changepoint model is used with a changepoint in every year (which returns the same result as a fully time-dependent model)<sup>9</sup> (for more details on TRIM approaches read Appendix 4). The TRIM program is a good way of analysing these data and will produce a model of the change in bird trapping activity (with mist nets) between a base year (i.e. 2007) and each subsequent year of sampling.

Figure 2 shows the trapping activity levels since 2007 across all 107 squares, with 95% confidence limits. A stratified random sample of 40 of the 107 squares was surveyed in Spring 2016.

It is important to highlight that the sample of squares has slightly been expanded to 107 (compared to 104 squares previously), hence the TRIM program has imputed missing values for these extra squares as well. As a result, if one were to compare the index values presented in Figure 2 below with the

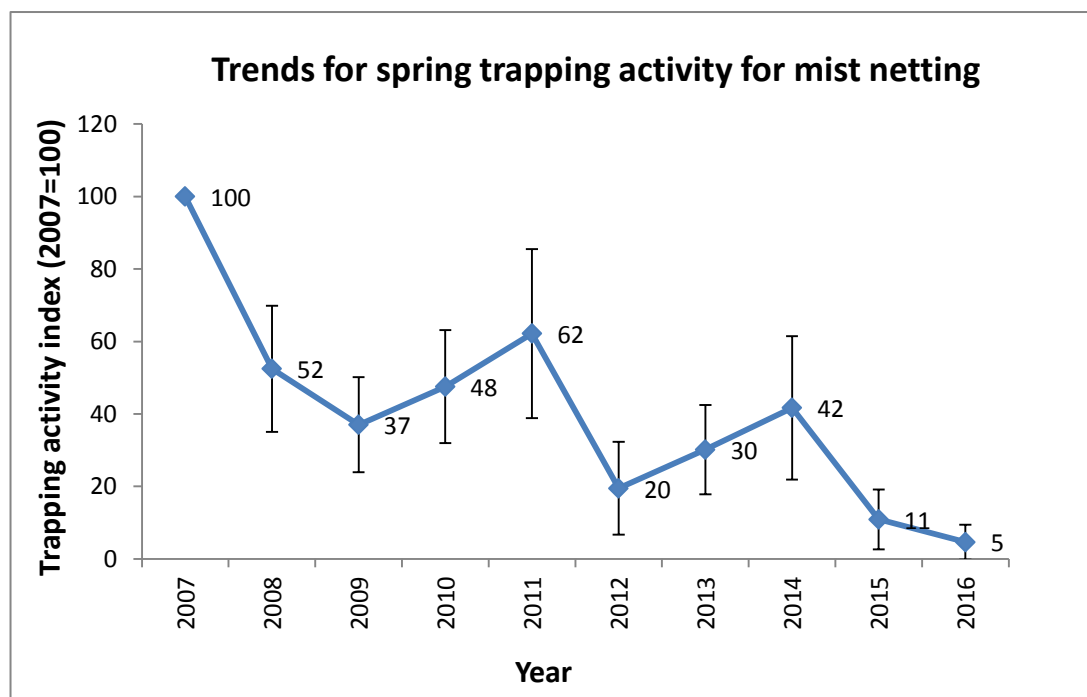
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invited to review the monitoring methodology of BirdLife Cyprus and to provide a report of their assessment and recommendations.

<sup>8</sup> This includes all 4 categories of net ride classification: P – Prepared, ANN – Active No Net, AUN – Active Unset Net and ASN – Active Set Net. Read Appendix 1 for details on net ride classification.

<sup>9</sup> This is a linear trend model using the stepwise approach and with all years selected as changepoints.

trend analysis results reported in the Spring 2015 trapping report<sup>10</sup>, the index values may vary slightly for the previous spring seasons (i.e. for Spring 2015 and earlier).



**Figure 2 Trends for spring bird trapping activity with the use of mist nets**

**Table 1 Statistics for trend for autumn trapping levels based on Figure 2**

	Multiplicative trend	Standard error	95% confidence interval	Significance
All squares	0,782	0,0336	6,5856	Steep decline (p<0.01)

Note 1: The multiplicative trend reflects the changes in terms of the average percentage change per year i.e. if the trend is equal to 1 then there is no trend. Hence value 0.782 calculated above indicates an overall decrease of around 22% per year in spring mist netting activity.

As it is shown in the graph above, trapping activity for spring 2016 showed the lowest levels of bird trapping activity with mist nets since the start of the surveillance programme, a very positive finding indeed. Mist netting activity for spring 2016 decreased by 95% compared to spring 2007 (index value of 100). Overall the pattern of low spring trapping observed in recent spring seasons has been maintained.

The sample of 107 squares includes 79 squares within the Republic of Cyprus (RoC), 21 within the Dhekelia Sovereign Base Area (SBA) and 7 squares that cover areas in both jurisdictions (referred to as 'Joint' squares). In spring 2016, 26 squares within the Republic of Cyprus, 12 squares within the SBA and 2 'Joint' squares were covered. **Due to the small sample size for the SBA, it is not considered**

<sup>10</sup> BirdLife Cyprus (October 2015) 'Update on illegal bird trapping activity in Cyprus' [report](#) (covering Spring 2015 season)

**suitable to undertake analysis in TRIM that will generate a trapping index with reasonable precision for this stratum without a wide margin of error involved. For this reason jurisdiction analysis has not been undertaken for spring 2016.**

It is emphasized that spring season is not the main trapping season of migratory song birds in Cyprus; this is the autumn season. Over the last few years spring seasons have shown an encouraging decrease in trapping, suggesting that spring trapping may be contained over the next few years. **The spring 2016 results are the lowest levels recorded for spring trapping since 2007. However these levels cannot be taken as a reliable barometer of the trapping situation in Cyprus and we must wait for the autumn 2016 season to reliably assess the state of play.**

## ***Enforcement***

There are 3 competent authorities that are responsible for enforcement against illegal bird trapping in Cyprus: the Game & Fauna Service and the Cyprus Police Anti-Poaching unit that are responsible for areas controlled under the Republic of Cyprus, and the SBA Police Anti-Poaching unit responsible for areas within the UK Sovereign Base Areas. The resources of the above-mentioned enforcement bodies are as follows:

- Game & Fauna Service, the responsible body for the implementation of the Birds Directive, has about 90 wardens in total across the whole of island. The Larnaca & Famagusta district, where most of the bird trapping takes place in Cyprus and where the survey area of BirdLife Cyprus is focused, has in total 20 game wardens,
- Cyprus Police Anti-Poaching Unit has 8 officers, and
- SBA Police Anti-Poaching Unit was comprised of 5 officers to cover the Eastern Dhekelia Sovereign Base Area during spring 2016. BirdLife Cyprus would like to thank the SBA Administration and SBA Police APU team for its willingness and support in undertaking joint field monitoring of illegal bird trapping with the BirdLife Cyprus team.

Table 2 summarises the number of reports that BirdLife Cyprus provided to the competent authorities regarding active trapping sites and the overall feedback given by the competent authorities. The information presented in the table below refers to active trapping sites as recorded by the survey team (this includes all net codes, P, ANN, AUN and ASN – see Appendix 1 for net ride classification - and sites where limesticks were found) and were reported to the competent authorities for further action.

**Table 2 Summary of trapping reports provided to competent authorities from BirdLife Cyprus during Spring 2016**

	<b>Game and Fauna Service – Larnaca &amp; Famagusta</b>	<b>SBA Police Anti-Poaching Unit</b>	<b>Cyprus Police Anti-Poaching Unit<sup>5</sup></b>
Number of reports	5	4	None reported
Prosecutions / Arrests	<i>No feedback provided</i>	0	N/R

Confiscations <sup>1</sup>	<i>No feedback provided</i>	0	N/R
Clearance <sup>2</sup> / Nothing <sup>3</sup>	<i>No feedback provided</i>	4	N/R

N/R – Not relevant; N/A – Not available

Note 1: Confiscations of mist nets, limesticks and/or calling devices.

Note 2: Clearance refers to collection of trapping paraphernalia such as pole bases, poles, loudspeakers, wires etc.

Note 3: 'Nothing' refers to reports where the competent authority checked the trapping location but reported it inactive (no nets or limesticks were found) upon its visit, hence no prosecution or confiscation took place, or no feedback was provided.

With regards to the Game and Fauna Service (Larnaca & Famagusta district), 5 trapping locations were reported, but no feedback has been provided to BirdLife Cyprus to this date and it is therefore assumed that no prosecutions or confiscations took place from its reports. In terms of the overall enforcement from the Game and Fauna Service for spring 2016 trapping season, BirdLife Cyprus has not been informed or seen any media coverage of any enforcement action from the Game Service.

With regards to the Dhekelia SBA Police Anti-poaching unit, 4 trapping locations were reported which were cleared off the trapping paraphernalia present. In terms of the overall enforcement from the SBA Police Anti-poaching unit for spring 2016 trapping season there was 1 prosecution, and 20 mistnets and 60 limesticks were confiscated<sup>11</sup>.

As for the Cyprus Police Anti-poaching unit, no trapping locations were reported to this enforcement agency. In terms of the overall enforcement from the Cyprus Police Anti-poaching unit for spring 2016 trapping season there were 10 prosecutions, and 41 mistnets and 559 limesticks were confiscated (CABS & SPA Foundation, July 2016)<sup>12</sup>.

Overall from the enforcement action statistics available to BirdLife Cyprus, it is clear that the Cyprus Police APU was the most active and effective agency in terms of enforcement against illegal bird trapping, followed by the SBA Police APU. Regarding the Game and Fauna Service, it is unfortunate that this enforcement agency has reduced its enforcement action year on year, based on the enforcement statistics available to BirdLife Cyprus (BirdLife Cyprus, March 2016<sup>13</sup>), although it is the main competent authority responsible for the implementation and enforcement of the Birds Directive, which includes illegal bird trapping and poaching as well.

## ***Social and political attitudes***

During this first half of 2016 there have been developments in terms of the illegal bird trapping issue in Cyprus, which BirdLife Cyprus believes will lead to a worsening of the situation, at a time that Cyprus have been identified as one of the key blackspots for illegal bird killing along the Africa-Eurasia bird migratory flyway in the Mediterranean sea (BirdLife International, March 2016). The political will of the Cyprus Government to tackle this issue appears non-existent, and despite the numerous

<sup>11</sup> Data provided from SBA Police via email (September 2016).

<sup>12</sup> Data taken from CABS & SPA Foundation [report](#) (July 2016), page 6.

<sup>13</sup> BirdLife Cyprus (March 2016) – Autumn 2015 [report](#), Enforcement section, p 21.

warnings of the European Commission to remove the ‘alternative plan’ from the approved Strategic Plan, the Cyprus Government has shown no intention of doing so. Furthermore a law amendment to the Law 152/2003 on ‘The Protection and Management of Wild Birds and Game Species’ was prepared by the Game and Fauna Service and has been brought to the Cyprus Parliament for discussion and voting, an amendment that BirdLife Cyprus believes that it would introduce a series of relaxations and loopholes in the existing legislation (read details below) and would essentially make enforcement ineffective, if these proposals were to be adopted.

With regards to the commitment of the SBA Administration to continue with its acacia removal programme in the mist netting hotspot of Cape Pyla, the SBAA was planning to undertake further acacia cutting in July 2016. However this was faced with opposition from the local community, supported from local politicians and Members of the Parliament, protesting that the SBAA is removing the acacia forest. Unfortunately the next phase of acacia removal has been put on hold after all the local opposition, which BirdLife considers a major setback to the acacia removal programme.

### Developments in the Republic of Cyprus

The illegal bird trapping issue in Cyprus has been on the spotlight of media since last May 2015, when the Ministerial Council of the Cyprus government approved on the 13<sup>th</sup> May 2015 the Strategic Plan for tackling illegal bird trapping, with the inclusion of the so-called ‘alternative plan’ for the ‘selective hunting of ambelopoulia, under a derogation’. The Autumn 2015 [report](#) of BirdLife Cyprus (March 2016) described in detail how this ‘alternative plan’ was a major setback for the implementation of a ‘zero tolerance’ approach against wildlife crime and how the various environmental NGOs had been advocating and lobbying jointly for the removal of this derogation.

The European Commission has categorically stated that such a derogation cannot be granted under European legislation<sup>14</sup>. More importantly in the last Package Meeting between the Cyprus Government and a delegation from the European Commission in February 2016, the Commission stressed the following regarding the issue of illegal bird trapping *‘Both parties agree that this remains a significant issue. The Commission raised the necessity for more decisive action (especially to reduce bird offer in restaurants and consumption) and reiterated the demand to see the hunting derogation option being removed from the Strategic Action Plan’*<sup>15</sup>.

Therefore it is very clear what the Commission is expecting from the Cyprus Government in terms of showing more decisive action to tackle illegal bird trapping, and yet the Government has not shown any intention of removing the ‘alternative plan’ from the Strategic Plan or to undertake any serious restaurant enforcement. And to make things worse, the Cyprus Government and in particular the Game and Fauna Service prepared a law amendment to the Law 152/2003 on ‘The Protection and Management of Wild Birds and Game Species’ and has brought it to the Cyprus Parliament for

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<sup>14</sup> Read relevant e-news [article](#) (BirdLife Cyprus, January 2016) regarding Commission’s negative reply on the ‘alternative plan’

<sup>15</sup> BirdLife Cyprus was provided on the 8<sup>th</sup> July 2016 the relevant text on illegal bird trapping from the official minutes of the Package Meeting, after a request was made to the Legal Department of the EU Commission.



discussion and voting. The proposals of the Game Service in this law amendment include the following, amongst others:

- on-the-spot fine regulation for all offences,
- the issuing of written warnings for specific offences,
- the improvement of protection measures for habitats and SPAs,
- the possibility to use air rifles for hunting,
- the introduction of falconry,
- the legalisation of the use of artificial decoys as bird models and mechanical calling devices for hunting, and
- the legalisation for hunters to be permitted to take their game to restaurants and to consume it there, a move that would effectively 'legalise' the offer of game in restaurants, as it will be impossible for law enforcement agencies to check the origin of the birds on offer or whether the birds are being offered or sold.

BirdLife Cyprus believes that all these proposals, apart from improvement of protection measures for habitats and SPAs, would essentially introduce a series of relaxations and loopholes in the existing legislative framework without achieving any updating and modernisation of the Main law, and that these proposals would be disastrous for the sustainable management of game and the conservation of wild birds, and completely ineffective with regards to better combating of poaching and illegal bird trapping in Cyprus. BirdLife Cyprus expressed its serious concerns and strong opposition to these proposals during the discussions held at the Environment Committee of the Cyprus Parliament on [29 June 2016](#) and on the [13 July 2016](#), when position papers were submitted with our key arguments why these proposals are in breach of the Birds Directive and/or introduce relaxations to the existing legislation (read relevant [June](#) and [July](#) 2016 e-news articles).

During the discussions at the Cyprus Parliament it became clear that the Game and Fauna Service did not undertake any meaningful and transparent public consultation dialogue with any stakeholder, including government agencies, apart from the Cyprus Hunting Federation & Wildlife Conservation. In essence the law amendment that was brought for voting by the Game and Fauna Service to the Cyprus Parliament was consulted solely with a single interest group, the Cyprus hunting lobby, and no other stakeholders were involved in the consultation process. Therefore it came as no surprise that most of the proposals of the Game and Fauna Service reflected the demands and requests of the Cyprus hunting lobby group, regardless of the fact that they are very likely in breach of the Birds Directive. After this lack of public consultation became evident during the Parliamentary discussion that took place on 13 July 2016, the Environment Committee ordered the Game and Fauna Service to withdraw the bill, to carry out a meaningful public consultation dialogue with all stakeholders and to bring the bill back to the Parliament for discussion in September, outlining the comments and positions received by the various stakeholders.

The Game and Fauna Service carried out a Public Consultation regarding this law amendment and two new regulation proposals (captive breeding regulations and dog training areas regulations) on 5 August 2016, which BirdLife Cyprus attended. Our aim is to continue our lobbying effort for the withdrawal of all these unacceptable proposals that have been included, in order to prevent further relaxation of the current legislation, which we also believe are in direct conflict with the provisions of

the Birds Directive and if voted for could cause the Republic further headaches with the European Commission.

### Acacia removal programme in Cape Pyla from the SBA Administration

As described in the Autumn 2015 [report](#) (March 2016), the SBA Administration had undertaken a number of key steps for tackling illegal bird trapping in the Eastern SBA, and particularly in the mist netting hotspot of Cape Pyla, in 2015 and early 2016. These included the designation of Cape Pyla as a Special Area of Conservation and the continuation of the acacia removal programme in Cape Pyla (January 2016).

The SBAA had planned to continue with the acacia removal programme in July 2016, prior to the main autumn trapping season. In a similar manner to 2015, numerous residents of the local community of Xylofagou organised a protest in the military firing range of Cape Pyla to stop the cutting of acacia trees (see Figure 3). Sadly this protest was supported and attended by various Members of the Parliament as well. As a response to this, a [joint Press Release](#) from the environmental organisations was prepared and sent to the media on 21 July 2016, highlighting the support of these organisations for the acacia removal programme of the SBAA *'Removing acacias will help towards the restoration of the natural ecosystems to a favourable status, which is an obligation by law, and the reduction of illegal bird trapping. Therefore we support the acacia removal programme of the British Bases'*. The PR was well covered in the media, however the political pressure fuelled by the local reactions also appeared to be strong.



**Figure 3 Protest at Cape Pyla against the removal of acacia trees, an invasive alien species**

It should be noted that acacia removal in Cape Pyla was also carried out in 1988 by the SBA Administration, and the local community of Xylofagou had again protested against the cutting of

acacias carried out (read Appendix 5). In fact the article with title '*The British continue with the cutting of trees in Xylofagou*' mentioned that there were heated protests by the locals, including the blocking of the main road leading to Ayia Napa, causing a serious traffic jam.

Unfortunately the next phase of acacia removal that was planned for July 2016 was cancelled, following the reactions and pressure from the locals. This is a major setback to the acacia removal programme and to the eyes of local trappers a supposed victory, whom have been planting acacias for mist netting for many years in Cape Pyla. BirdLife Cyprus hopes that the SBAA will remain committed to its acacia removal programme in Cape Pyla and continue with the restoration of this area, that has now been designated a Special Area of Conservation due to its high floristic value.

## 4. Discussion

Illegal bird trapping activity with the use of mist nets and limesticks continued during spring 2016, as shown by the survey data from the systematic surveillance programme of BirdLife Cyprus and other data sources (e.g. CABS spring 2016 report). The overall pattern of spring monitoring in recent years has shown illegal bird trapping activity levels to be much lower than in the past –spring 2016 recorded the lowest levels of bird trapping activity, with a decrease of 95% compared to spring 2007, a very encouraging finding. However BirdLife Cyprus would like to emphasize that spring trapping cannot be taken as a reliable barometer of the trapping situation in Cyprus – as with previous spring seasons of low trapping activity (2012-2015), they were followed by very high trapping levels during the main autumn trapping seasons. BirdLife Cyprus will remain cautious until the next autumn 2016 which will provide a far better picture of the overall trapping situation in Cyprus.

Despite this positive outcome with regards to spring trapping activity, the developments of the past months are very likely to lead to a worsening of the situation, at a time that Cyprus have been identified as one of the key blackspots for illegal bird killing along the Africa-Eurasia bird migratory flyway in the Mediterranean sea (BirdLife International, March 2016). The scientific paper that was published in the journal 'Bird Conservation International' highlighted that *'...In the late 1980s, Cyprus had a reputation for killing more individual birds per capita than any other country in the Mediterranean (Magnin 1987) and our data indicates that this may remain the case'*. The findings of this study showed Cyprus ranking first with the highest estimated mean number of birds killed per capita, 196 birds killed per 100 people, followed by Lebanon with 44 birds killed per 100 people.

With regards to developments in the Republic of Cyprus, there is a clear lack of political will to tackle illegal bird trapping. The 'alternative plan' for 'selective hunting of ambelopoulia, under derogation' has not been withdrawn from the Cyprus Government, despite the numerous warnings from the European Commission to remove it. In the Package Meeting that took place in February 2016 between the Cyprus Government and a delegation from the Commission, the following was stressed with regards to illegal bird trapping *'...The Commission raised the necessity for more decisive action (especially to reduce bird offer in restaurants and consumption) and reiterated the demand to see the hunting derogation option being removed from the Strategic Action Plan'*<sup>16</sup>.

Moreover, a law amendment to the Law 152/2003 on 'The Protection and Management of Wild Birds and Game Species', prepared by the Game and Fauna Service, has been brought to the Cyprus Parliament for discussion and voting, an amendment that BirdLife Cyprus believes it would introduce a series of relaxations and loopholes in the existing legislation and would essentially make enforcement ineffective. BirdLife Cyprus has expressed its serious concerns and strong opposition to the majority of these proposals during the discussions held at the Environment Committee of the Cyprus Parliament (June & July 2016) and has submitted position papers that explain its key arguments why these proposals are in breach of the Birds Directive and/or introduce relaxations to the existing legislation.

With regards to the SBA Administration, it had planned to continue with the acacia removal programme in July 2016, prior to the main autumn trapping season. The local community of

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<sup>16</sup> BirdLife Cyprus acquired the official minutes of the Package Meeting on the 8<sup>th</sup> July 2016 from the Legal Department of the European Commission

Xylofagou, in a similar manner as last summer 2015, organised a protest in the military firing range of Cape Pyla to stop the cutting of acacia trees, arguing it is their local forest – it is highlighted that acacia is an invasive, alien species that has displaced and taken over the local flora of the area, and the habitat needs urgent management to restore it to its original status. This protest was also supported and attended by various Members of the Parliament. Sadly the planned acacia removal was cancelled, following the reactions and pressure from the locals and politicians. BirdLife Cyprus considers this development as a major setback to the acacia removal programme and to the eyes of local trappers a supposed victory, who have been planting acacias and undertaking mist netting for many years in Cape Pyla.

Various ongoing developments and setbacks have taken place in 2016 with regards to illegal bird trapping, both in the Cyprus Republic and the SBA areas. On the one hand, BirdLife Cyprus will continue its lobbying effort for the withdrawal of all these unacceptable proposals that have been included in the law amendment to the Law 152/2003, in order to prevent further relaxation of the current legislation. BirdLife views that many of these proposals are also in direct conflict with the provisions of the Birds Directive and if voted for could cause the Republic further headaches with the European Commission. And on the other hand, BirdLife will continue its pressure towards the SBA Administration to restart with its acacia removal programme in Cape Pyla, an action that will highlight the Administration's continued commitment at stopping large scale trapping with mist nets in this area and at the same time will continue with the restoration of the area, that has now been designated a Special Area of Conservation due to its high floristic value.

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# Appendix 1

## Methodology of the trapping surveillance programme

### Survey area and sampling strategy

The surveillance project began in 2002 with the coverage of 60 sample squares (each 1x1 km) chosen at random from within a 261 km<sup>2</sup> study area, which covered most of the Famagusta/Eastern Larnaca area and the Ayios Theodoros – Maroni area.

In 2005, the monitoring became more targeted, focusing on habitat suitable for trapping. Each 1 km square within the study area was classified as either a 'possible bird trapping area' or 'unlikely bird trapping area' based solely on the presence or absence of vegetation suitable for setting limesticks or nets. Surveillance subsequently took place in 'possible' squares only. Some 44 of the original 60 sample squares were 'possible bird trapping area' squares under the new classification. These 44 squares were kept, with another 16 new squares chosen randomly to bring the total sample to 60 again.

Then, in 2007, the survey area was expanded to cover 295 km<sup>2</sup> for Famagusta/Eastern Larnaca area and 111 km<sup>2</sup> for Ayios Theodoros – Maroni area, bringing the total survey area to 406 km<sup>2</sup>. This was done after preliminary surveys in autumn 2006 found evidence of extensive trapping on the margins of the original (261 km<sup>2</sup>) survey area. The sample size was expanded to 100 squares (40 new squares were randomly chosen) to allow for this extension of the survey area. Out of the 406 1 km<sup>2</sup> squares of the expanded survey area, 301 have been classified as 'possible bird trapping area' squares.

The random selection of sample squares is stratified to ensure representative coverage of areas under SBA, Republic of Cyprus and "Joint" jurisdiction (squares where the two jurisdictions meet). In terms of the analysis of the survey data BirdLife Cyprus is using the TRIM (Trends & Indices for Monitoring data) programme, which enables the analysis of time series of counts with missing observations (read more about TRIM in Appendix 4).

### Surveying for trapping activity

Surveying consists of a two-man team systematically searching for evidence of illegal trapping activity in the randomly selected one by one kilometre squares. The time taken to survey each square is recorded, as are weather patterns and the presence or absence of large numbers of migrant birds.

For safety reasons (avoidance of possible confrontation with trappers) the BC observers do not go out in the field at dawn, which is the main period of trapping activity, but carry out surveys between 09:00 and 17:00. Each sample square is surveyed only once each season, partly for safety reasons (minimising the risk of the observers becoming known to trappers) and partly because repeat sampling of each square has no particular value when it comes to analysis of the collected data. Opportunistic observations are also made in the surroundings of squares where mist netting is suspected. Trapping activity includes:

- mist netting activity, which is the main focus of the surveillance programme of BirdLife Cyprus. This is calculated using the total length of active net rides recorded within the survey area; and
- limesticks, using the total number of active limesticks found within the survey area.

### Mist nets

The two observers carry out a thorough search of all habitat patches suitable for the setting of mist nets (i.e. all areas with bushes and/or trees) within each sample square. The observers record all direct and indirect evidence of mist net and tape lure use and of net ride preparation and use (e.g. cleared corridors within vegetation for putting up nets, presence of pole bases). The codes used for the various categories of mist netting activity and tape lure use are given below, as are the codes used for recording the type of habitat where trapping activity is detected. The surveyors note cases where they come across enclosed (fenced) areas that they cannot see into at all, or cannot see into well enough to survey fully.

#### **Box 1 Key to survey codes used for the field**

<u>Net code</u>	<u>Habitat code</u>	<u>Tape lure code</u>
O – old ride	A – acacia	P – tale lure present, playing
P – ride recently prepared	C – citrus	L – loudspeakers present
ANN – active no nets present	E – eucalyptus	Y – tape lure present, not playing
AUN – active unset net present	F – fig	U – unknown
ASN – active set net present	J – mulberry	W – electrical wires associated with tape lures
IUN – inactive unset net present	O – olive	B – car battery present
	M – maquis	
	P – pomegranate	
	K – carob	
	Cy – cypress	
	L – lentisk	
	S – syrian plum	

The main net ride classifications are described below:

- Prepared (P): A net ride that is clearly ready to be used but there is no evidence e.g. bird feathers, blood stains, thrown pebbles, to suggest illegal activity was taking place the previous night / morning (see Figure 4),
- Active No Net (ANN): A net ride that from the evidence found e.g. bird feathers, blood stains, thrown pebbles, indicates that illegal activity was taking place the previous night / morning but no net is present (see Figure 5),
- Active Unset Net present (AUN): A net ride where the trapper has left the mist net on the poles but it is furled i.e. the mist net is not stretched up for catching birds but lowered down (or the net is placed e.g. under a tree) (see Figure 6), and
- Active Set Net present (ASN): A net ride where the trapper has left the mist net set on the poles and it is ready for catching birds (see Figure 7).





**Figure 4: Prepared (P) net ride**



**Figure 5: Active No Net ride (ANN) with poles, bases, feathers & signs of trampling in an olive grove**



**Figure 6: Active Unset Net present (AUN) in an olive grove**



**Figure 7: Active Set Net present (ASN) –corridors in orchards are often used for mist netting**

### Limesticks

While the main effort of the observers is to locate evidence of mist netting, all evidence of limestick activity is also recorded. Limesticks are much harder to locate in the field than mist nets and are often set in a different habitat to mist nets. In addition, incidental evidence for limestick use is hard to detect (though trees pruned to hold limesticks are readily identifiable). It is impractical to search entire 1 km<sup>2</sup> sample squares for limesticks due to the time consuming nature of the task. The protocol is therefore for the observers to look out for limesticks while concentrating on surveying for mist netting activity.

## **Appendix 2**

### **Survey data for spring 2016**

#### **Evidence of illegal bird trapping activity within survey squares**

Confidential information – provided upon request

#### **Evidence of illegal bird trapping activity outside survey squares**

Confidential information – provided upon request

## Appendix 3

### Estimation of numbers of birds caught during spring 2016

The following key assumptions are applied for the estimation of the birds killed:

- 12 metres is the assumed average length for a mist net
- 20 birds are caught per 12-m net per day (Magnin, 1986 )
- 0.5 birds are caught per limestick per day
- 60 days is the duration of the trapping period for spring and autumn seasons
- 50% scaling factor – applied for spring estimates to account for a lower number of migrating birds passing via Cyprus compared to the autumn
- 301 are the possible bird trapping squares within the survey area as identified from the surveillance programme in 2007 (the random sample of squares surveyed by BirdLife Cyprus is taken from these 301 squares)
- 75% of illegal trapping activity for all of Cyprus takes place within the survey area (based on input from enforcement authorities and other experts)
- Net ride categories 'ANN' (Active No Nets), 'ASN' (Active Set Nets) and 'AUN' (Active Unset Nets) nets are assumed that they are active every day during the trapping season (read Appendix 1 for details on net ride classification).
  - Note: Net ride category 'P' (Prepared) is not taken into account for the estimation of numbers of birds killed anymore, following the recommendation of BTO science experts (BTO report, July 2015) to revise slightly the equation.

Using the above assumptions the bird death toll is estimated as follows for spring 2016:

For nets = [(Total length of ANN+AUN+ASN rides)] / (average length of a net) x (20 birds per net per day) x (total number of 'possible bird trapping area' squares / number of squares surveyed) x (length of trapping season in days) x (50% scaling factor)  
= [(18)] / (12) x (20) x (301/40) x (60) x (50%)  
= **6,773** could have been caught within the survey area in **mist nets**.

For limesticks = (Total number of limesticks found) x (0.5 birds per limestick per day) x (total number of 'possible bird trapping area' squares / number of squares surveyed) x (length of trapping season in days) x (50% scaling factor)  
= 4 x 0.5 x (301/40) x 60 x 50%  
= **452** birds caught within the survey area on **limesticks**.

**In total 7,224 birds** could have been killed in mist nets and on limesticks within the survey area during spring 2016. Assuming that the survey area accounts for 75% of the trapping activity in Cyprus, the bird death toll across Cyprus is:  
= 7,224 / 75%  
= **9,632 birds could have been killed in nets and on limesticks across all Cyprus during spring 2016.**

## Appendix 4

### TRIM model description

TRIM (TRENds & Indices for Monitoring data) is a program for the analysis of time series of counts with missing observations. The program can be used to estimate indices and trends and to assess the effects of covariates on these indices and trends. TRIM analyses time series of counts, using Poisson regression and produces estimates of yearly indices and trends (Panneelock & van Strien 2005). If observations are missing, TRIM estimates the missing values on the basis of changes observed on plots that were monitored.

In other words, TRIM enables us to use the data from all the trapping survey squares ever surveyed under the BirdLife Cyprus surveillance programme during the autumn period, in total 104 squares, even though these squares were not all covered each autumn season. The programme 'fills in' missing values for squares that were not covered in a particular year on the basis of the general trend derived from the data as a whole. The TRIM software (freely available from <http://www.ebcc.info/trim.html>) is very widely used for analysis of field data from ecological or biological studies. It works as an index, setting the first year of a time series of data the value of 100 (in this case year 2002) and showing up or down changes in subsequent years relative to this value of 100.

TRIM program allows the user to select various models to undertake the analysis: a) Model 1: No time-effects, b) Model 2: Linear (switching) trend, and c) Model 3: Effects for each time-point. **For the analysis presented in this report BirdLife Cyprus has selected Model 2, following the advice of RSPB senior conservation scientist Mr Simon Wotton.** Below is an explanation of why.

Which model should one use: the time-effects model or the linear trend model? (Panneelock & van Strien 2005)

The time effects model (= year effects model in case the time points are years) estimates parameters for each separate year and should be chosen if one wants to assess indices for each year. The linear trend model should be chosen if one is interested in testing whether a trend has happened across a number of years, by selecting one or more years as changepoints. The linear trend model should also be chosen when the data are too sparse to run the time effects model. Using the linear trend model also allows testing trends before and after particular changepoints. Options are (1) to test trends before and after a priori selected changepoints or **(2) to let TRIM search for the substantial changepoints by using the stepwise procedure.** If all years are selected as changepoints, the linear trend model is equivalent to the time effects model (although it results in a description in terms of trend slope parameters rather than time point parameters). Note that the linear trend model also produces indices for each year, but not necessarily based on yearly parameters as in the time effects model. Instead of yearly parameters, the linear trend uses the trend across a number of years to approximate the indices.

**BirdLife Cyprus has used the 'Linear trend model by using the stepwise procedure and with all years selected as changepoints' for the trend analysis presented in this report, following the recommendation of RSPB senior conservation scientist Mr Simon Wotton.**

The linear trend model can be run without any changepoints selected. Thereby it imputes missing counts based on the trend over the whole period studied. Be careful in using the model without any changepoints; the resulting indices might be unrealistic (this is the key point why this approach was not recommended and all years were selected as changepoints).



## Appendix 5

Article clipping published in 1988 in the yearly magazine 'Review' (in Greek 'Anaskopisi') with title '*The British continue with the cutting of trees in Xylofagou*'. The magazine was written by an independent team of journalists in Cyprus.

