



UPDATE on illegal bird trapping activity in Cyprus

Covering the autumn 2014 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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Date: March 2015

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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 το φθινόπωρο 2014, ενώ παράλληλα κάνει και μια ανασκόπηση της κατάστασης που επικρατεί για αυτό το θέμα στο νησί. Επισημαίνεται ότι 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 οικολογικού προβλήματος, το οποίο έχει αυξηθεί δραματικά τα τελευταία χρόνια.

Η ανάλυση των δεδομένων από την έρευνα πεδίου δείχνει ότι καταγράφηκαν συνολικά 16 χιλιόμετρα διαδρομών για δίκτυα που ήταν ενεργά το φθινόπωρο 2014. Με αυτά τα επίπεδα παγίδευσης εκτιμάται ότι πάνω από 1,5 εκατομμύριο πτηνά μπορεί να θανατώθηκαν εντός της περιοχής έρευνας. Η χρήση δικτύων αυξήθηκε κατά 47% σε σύγκριση με το έτος 2002 σύμφωνα με την ανάλυση που έγινε στο πρόγραμμα TRIM (για την ανάλυση χρησιμοποιήθηκε η προσέγγιση 'Linear trend model using the stepwise approach'), και δυστυχώς τα φετινά επίπεδα ήταν τα ψηλότερα που καταγράφηκαν από την αρχή του προγράμματος παρακολούθησης. Όσο για τα ξόβεργα, καταγράφηκαν συνολικά πάνω από 6000 σύμφωνα με τα στοιχεία πάταξης των αρμοδίων αρχών και άλλων ΜΚΟ, κατά πλειοψηφία σε περιοχές της Δημοκρατίας, δείχνοντας έτσι την εκτεταμένη χρήση των ξοβέργων που γίνεται πλέον.

Ως συμπέρασμα, τα στοιχεία της έρευνας πεδίου και η ανάλυση επιβεβαιώνουν τη βιομηχανοποιημένη κλίμακα της παράνομης δραστηριότητας για την παγίδευση πουλιών, τόσο με δίκτυα όσο και με ξόβεργα, και ότι η κατάσταση είναι εκτός ελέγχου τα τελευταία χρόνια, ανατρέποντας όλα τα (συγκριτικά) θετικά αποτελέσματα που επιτεύχθηκαν πριν από το 2007.

Τόσο η Κυπριακή Δημοκρατία όσο και η Διοίκηση των Βρετανικών Βάσεων αδυνατούν να εκπληρώσουν τις υποχρεώσεις τους σύμφωνα με την Οδηγία για τα Πτηνά. Από την μια πλευρά η Δημοκρατία έχει κυρίως να ασχοληθεί με την εκτενή και σε μεγάλη κλίμακα χρήση ξοβέργων και τα εστιατόρια που σερβίρουν παράνομα παγιδευμένα πουλιά. Από την άλλη πλευρά η Βρετανική Βάση Δεκέλειας έχει γίνει μια περιοχή όπου η χρήση δικτύων για παγίδευση πουλιών είναι εκτεταμένη, όπου οι φθινοπωρινές καταγραφές για τη χρήση δικτύων έδειξαν για άλλη μια φορά τα επίπεδα να είναι πολύ υψηλότερα στις Βρετανικές Βάσεις σε σύγκριση με τη Δημοκρατία. Είναι πλέον καιρός οι δύο δικαιοδοσίες να ενώσουν τις δυνάμεις τους για να πατάξουν αυτή την παράνομη επιχείρηση προσφοράς και ζήτησης, αν θέλουν πραγματικά να αντιμετωπίσουν το πρόβλημα στη ρίζα του.

Ο Πτηνολογικός Σύνδεσμος Κύπρου αναγνωρίζει τις προσπάθειες πάταξης όλων των αρμοδίων αρχών (Υπηρεσία Θήρας & Πανίδας, Κλιμάκιο Πάταξης Λαθροθηρίας της Αστυνομίας Κύπρου και Κλιμάκιο Πάταξης Λαθροθηρίας των Βρετανικών Βάσεων). Η Υπηρεσία Θήρας δεν ήταν τόσο αποτελεσματική όσο το φθινόπωρο 2013 και τα αποτελέσματα της διωκτικής δράσης της ήταν παρόμοια με αυτά των φθινοπώρων του 2011 και 2012 (για τους μήνες Αύγουστο - Οκτώβριο έγιναν 57 καταγγελίες και

κατασχέθηκαν 235 δίχτυα και 1577 ξόβεργα). Όσο για το Κλιμάκιο Πάταξης Λαθροθηρίας της Αστυνομίας Κύπρου, και με βάση το διαθέσιμο προσωπικό του, ήταν πολύ αποτελεσματικό σε συλλήψεις και καταγγελίες αυτό το φθινόπωρο (για τους μήνες Αύγουστο - Οκτώβριο έγιναν 27 καταγγελίες και κατασχέθηκαν 116 δίχτυα και 3950 ξόβεργα). Επίσης το Κλιμάκιο Πάταξης Λαθροθηρίας των Βρετανικών Βάσεων ήταν αρκετά αποτελεσματικό σε συλλήψεις για το φθινόπωρο 2014 σε σύγκριση με προηγούμενα χρόνια – για την ακρίβεια το συγκεκριμένο Κλιμάκιο έκανε τον πιο ψηλό αριθμό καταγγελιών από το 2011 (έγιναν 28 καταγγελίες και κατασχέθηκαν 184 δίχτυα και 256 ξόβεργα για την ίδια περίοδο). Παρόλα αυτά οι επιχειρήσεις σκούπα εντός των Βρετανικών Βάσεων Δεκέλλειας ήταν πολύ λίγες κατά τη διάρκεια αυτής της περιόδου, οι οποίες αποτελούν ένα σημαντικό αποτρεπτικό παράγοντα ιδιαίτερα σε περιοχές όπως το Κάβο Πύλα.

Και ενώ υπήρξε διωκτική δράση στις περιοχές όπου γίνεται η παγίδευση, η πάταξη κατά των εστιατορίων που σερβίρουν *αμπελοπούλια* ήταν πολύ περιορισμένη για το 2014. Ο Πτηνολογικός δεν έχει πληροφορηθεί να έγιναν οποιεσδήποτε καταγγελίες εστιατορίων για παράνομο εμπόριο πουλιών από τις αρμόδιες αρχές της Δημοκρατίας ενώ οι έλεγχοι ήταν περιορισμένοι, κάτι ιδιαίτερα ανησυχητικό δεδομένου ότι τα εστιατόρια αποτελούν το οικονομικό κίνητρο αυτής της παράνομης δραστηριότητας.

Εν μέρει υπήρξε κάποια πολιτική βούληση κατά τη διάρκεια του έτους 2014. Η Κυπριακή Δημοκρατία και η Αστυνομία Κύπρου αύξησε την πάταξη κατά της παγίδευσης πουλιών και ξεκίνησε ξανά η συνεργασία της Αστυνομίας με τον οργανισμό CABS. Όσο για τη Διοίκηση των Βρετανικών Βάσεων, έχει υπάρξει πρόοδος στην αντιμετώπιση της περιοχής Κάβο Πύλα όπου γίνεται εκτεταμένη παγίδευση με δίχτυα, με τις δράσεις για αφαίρεση ακακιών προς τα τέλη του 2014 αλλά και με την επικείμενη έναρξη της διαδικασίας για τον καθορισμό της περιοχής αυτής ως Ειδική Ζώνη Διατήρησης, το οποίο είναι κάτι εξαιρετικά σημαντικό και πολύ ενθαρρυντικό. Ο Πτηνολογικός Σύνδεσμος Κύπρου υποστηρίζει αυτή τη δράση και είναι πρόθυμος να συμβάλει όπου μπορεί με την εμπειρία και γνώση που έχει το προσωπικό του σε θέματα προστασίας και αποκατάστασης βιοτόπων.

Είναι ξεκάθαρο ότι υπάρχει επείγουσα ανάγκη για την υιοθέτηση της στρατηγικής κατά της παράνομης παγίδευσης πουλιών, προκειμένου να αρχίσει η εφαρμογή της το συντομότερο δυνατόν στις αρχές του 2015. Η στρατηγική αυτή παραμένει στάσιμη από το Μάιο 2014, αφού οι αρμόδιες αρχές της Κυπριακής Δημοκρατίας δεν έχουν δώσει κάποια επίσημη απάντηση για το θέμα αυτό (επισημαίνεται ότι η Διοίκηση των Βρετανικών Βάσεων έχει ήδη υιοθετήσει τη στρατηγική). Είναι σαφές από τα τρέχοντα επίπεδα παγίδευσης ότι η κατάσταση επιδεινώνεται χρόνο με το χρόνο και ότι μια κοινή στρατηγική, όπου όλοι οι εμπλεκόμενοι φορείς θα συμμετέχουν ενεργά, είναι ο μόνος τρόπος για να αντιστραφεί αυτή η κατάσταση.

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, και τονίζεται η άμεση ανάγκη για υιοθέτηση ενός ΣΣΔ, συμφωνημένο από όλους.

Τα έξοδα για την εργασία πεδίου του Πτηνολογικού (καύσιμα αυτοκινήτου), καθώς και τα έξοδα των εκάστοτε εθελοντών, καλύπτει η οργάνωση του BirdLife International στη Γερμανία, NABU, καθώς και το Heinz Sielmann Stiftung Foundation, ενώ το RSPB καλύπτει 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 autumn 2014 season, while also providing an overview of the current climate regarding this issue on the island. It is highlighted that this report is mainly aimed at top decision makers and politicians, with the aim of informing, raising awareness and generating momentum for more effective action to tackle this chronic ecological problem, which has grown dramatically in the last few years.

The analysis of the survey data shows that 16 km of net rides were active during the autumn of 2014. These trapping levels could have resulted in over 1.5 million birds killed within the survey area. Mist netting activity for autumn 2014 has increased by 47% compared to 2002, based on analysis from the TRIM software (the 'Linear trend model using the stepwise approach' was used for the analysis), and sadly has been the highest trapping activity recorded since the start of the surveillance programme. With regards to limesticks more than 6,000 in total were reported from enforcement agencies and other NGOs, mostly within the Republic, highlighting the extensive limestick use that is taking place nowadays.

In conclusion, the survey data and the analysis confirm the industrial scale of illegal bird trapping activity, both with mist nets and limesticks, and that the situation is out of control in the last few years, reversing all the (relatively) positive results achieved prior to 2007.

Both the Republic of Cyprus and the UK sovereign base areas (SBA) Administration are failing to meet their obligations under the Birds Directive. On the one hand the Republic has in particular to deal with the extensive and large scale use of limesticks and the restaurants that illegally serve the trapped birds. On the other hand the Dhekelia SBA area has become a mist netting hotspot, with autumn mist netting levels once again very much higher in the SBAs than the Republic. It is time that both jurisdictions join forces to clamp down on this supply – demand illegal business chain, if they are serious about tackling the problem at its root.

The enforcement efforts of all three competent authorities (Cyprus Game & Fauna Service, Cyprus Police Anti-Poaching Unit and SBA Police Anti-Poaching Unit) are acknowledged by BirdLife Cyprus. With regards to Game & Fauna Service it has not been as effective as last autumn 2013 and its enforcement action effectiveness was at similar levels as autumns 2011 and 2012 (57 prosecutions and 235 mist nets and 1,577 limesticks were confiscated during the months August to October). As for the Cyprus Police it has been very effective this autumn in using its available resources for making arrests and prosecutions (27 prosecutions and 116 mist nets and 3,950 limesticks were confiscated during the months August to October). Also the SBA Police Anti-poaching unit has been quite successful in making more arrests for autumn 2014 compared to previous years – in fact it is the highest number of prosecutions since 2011 for this agency (28 prosecutions and 184 mist nets and 256 limesticks were confiscated for the same period). However, clearance operations within the Dhekelia SBA were very few for this period, which is an important deterrent action particularly in areas such as Cape Pyla.

Although enforcement action took place on the trapping fields, enforcement against restaurants serving *ambelopoulia* has been limited for 2014; BirdLife Cyprus has not been informed of any restaurant prosecutions by the Republic enforcement agencies regarding illegal bird trade and raids have been limited, which is particularly worrying since restaurants are the key economic driver of this illegal activity.

To an extent some political will has been shown during the year 2014. The Republic of Cyprus and the Cyprus Police stepped up their anti-trapping enforcement action and restarted the cooperation with CABS organization. As for the SBA Administration, it has made progress with tackling the Cape Pyla mist netting hotspot, by carrying out acacia removals in late 2014 but more importantly with the imminent start of the process for the designation of this area as a Special Area of Conservation, which is very encouraging indeed. BirdLife Cyprus is very supportive of this action and is willing to contribute in the areas in which it has expertise and knowledge regarding habitat conservation issues.

It is clear that there is the urgent need for the adoption of the strategy against illegal bird trapping in order to start its implementation as soon as possible in early 2015. This strategy has been stagnant since May 2014, awaiting for an official reply from the Republic of Cyprus competent authorities (it is noted that the SBA Administration has already adopted the StAP Final document). It is evident from the current trapping activity levels that the situation is worsening year after year and this joint strategy, where all key stakeholders are actively engaged, is the only way forward to reverse this situation.

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, and
- 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, and calls for the urgent adoption of a StAP, agreed by all.

All the running costs for the field work (car fuel), as well as all the volunteer costs were covered by the Partner of BirdLife International in Germany, NABU, together with the Heinz Sielmann Stiftung Foundation, while the RSPB covers 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 and non-selective methods such as mist nets, limesticks and traps were prohibited. 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*) (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 152 bird species have been found trapped in mist nets or limesticks, of which 78 are listed as threatened by the EU Birds Directive and / or BirdLife International¹. 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 year².

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

¹ BirdLife Cyprus ‘List of birds recorded trapped in mist nets and on limesticks’ http://www.birdlifecyprus.org/upload/PDFs/Trapping/Consolidated%20list%20of%20trapped%20birds_EN.pdf

² Game and Fauna Service (17th 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

This report presents the latest survey results for autumn 2014, 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 km²) during daytime hours, with a focus on detecting mist netting activity. Limesticks are recorded if they are found while searching for mist nets. The number of squares has been 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 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 note its particular thanks to the RSPB (partner of BirdLife International in the UK) for supporting the project financially since the beginning. Furthermore BirdLife Cyprus would like to thank NABU (partner of BirdLife International in Germany) and the Heinz Sielmann Stiftung Foundation for their financial support from 2013 onwards. NABU and the Heinz Sielmann Stiftung Foundation cover the running costs and volunteer costs of the surveillance programme, whereas the RSPB covers salaries.

3. Results

Survey results

Field survey data

The field survey for autumn 2014 was carried out between September and October 2014 following the standard survey protocol. In total 50 squares were surveyed during this period and BirdLife Cyprus reported all trapping finds to the relevant enforcement authorities, either the SBA Police, or the Game & Fauna Service and the Cyprus Police Anti-poaching Unit, depending on the location of the finds.

A summary of the field data for autumn 2014 is presented in Appendix 2. In total the findings of the survey included 2,723 metres of active net rides (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 20 mist nets found *in situ* (either classified as Active Set Nets or Active Unset Nets³). Opportunistic checks outside the survey squares detected an additional 946 metres of active net rides and 11 mist nets *in situ* (see Appendix 2).

The total length of active mist net rides within the 406 km² survey area (Larnaka - Famagusta and Ayios Theodoros – Maroni areas) can be estimated at more than 16 km (2,793 m x 301 / 50)⁴.

In terms of limesticks, BirdLife Cyprus detected 168 limesticks this autumn (compared to 116 limesticks in autumn 2013) within the surveyed squares and 37 limesticks during opportunistic checks (see Appendix 2). However, it is noted here that BirdLife Cyprus does not focus its field survey on the detection of limesticks, as other organisations do. For example, during the autumn 2014 camp of the Committee Against Bird Slaughter (CABS) from 15th September to 12th October, a total of 3,950 limesticks and 116 mist nets were detected and confiscated^{5,6}. In addition another organisation, Migratory Birds Conservation in Cyprus (MBCC) detected and collected during their autumn field survey another 335 limesticks⁷. It is highlighted that nearly all the limesticks detected by CABS and MBCC were in areas controlled by the Republic of Cyprus. In addition the MBCC has reported that hundreds, if not thousands of bee-eaters, were shot dead during the autumn migration (MBCC, 2014), an illegal activity that takes place every year in Cyprus. Environmental

³ 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.

⁴ There are 301 1 km² squares in the survey area that are classified as suitable for trapping activity (on the basis of vegetation characteristics) and 50 of these squares were surveyed in Autumn 2014. Out of these 301 1 km² squares, 236 squares are found in the Republic areas and 65 are found in the Dhekelia SBA.

⁵ Survey data provided on 2nd December 2014 from CABS representative via email correspondence.

⁶ The CABS camp was undertaken in close cooperation with the Cyprus Police Anti-poaching unit. The breakdown of the results of the camp include: a) 27 prosecutions – amongst other paraphernalia 1,771 limesticks and 50 mist nets were confiscated, b) 37 confiscations - amongst other paraphernalia 2,179 limesticks and 66 mist nets were confiscated.

⁷ Survey data provided on 17th November 2014 from MBCC representative via email correspondence.

organisations, including BirdLife Cyprus, have reported this illegality on numerous occasions; however it is still a widespread problem that must be tackled by the competent authorities as part of the 'zero tolerance' approach towards poaching and illegal bird trapping.

Based on the data gathered in the field this autumn, BirdLife Cyprus estimates that over **1.5 million birds could have been killed within the survey area** and just over 2 million could have been killed across the whole of Cyprus⁸ (see Appendix 3 for details). If one were to split the potential death toll estimate between jurisdictions within the survey area (1.5 million birds) based on the trapping activity detected, then around 400,000 birds would be the potential killed in the Republic and more than 900,000 in the SBAs⁹ - the 'Joint' squares are not accounted for in the death estimates at the jurisdiction level. Note however, that the limestick toll is not fully covered in this estimate, which would make the potential kill in the Republic higher. The total estimate of birds killed is derived using field-gathered data in combination with expert judgement for some variables (such as the number of birds caught per net) that are too dangerous to measure in the field.

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 for over a decade 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 (Panneeloeck & 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

⁸ 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.

⁹ From the 2,723 metres of active net rides detected within the survey area, 601 metres were in the Republic of Cyprus (from the 35 squares surveyed), 2,036 metres were in the SBAs (from the 13 squares surveyed) and 86 metres were in 'Joint' squares. For the calculated death estimates at a jurisdiction level, the trapping finds in each jurisdiction are extrapolated to the total number of squares that are classified as suitable for trapping activity (see footnote 4 above).

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 then showing changes up or down in subsequent years relative to this value of 100.

The trends for autumn mist netting activity from the TRIM analysis are shown in the figures below. It is highlighted that the TRIM program has various model approaches that one can use to undertake an analysis. For this analysis the 'Linear trend model using the stepwise approach' and with all years selected as changepoints has been applied, upon the recommendation of RSPB senior conservation scientist Mr Simon Wotton (for details on TRIM approaches read Appendix 4). Figure 2 shows the trapping activity levels - it is noted that a stratified random sample of 50 of the 104 squares were surveyed for autumn 2014.

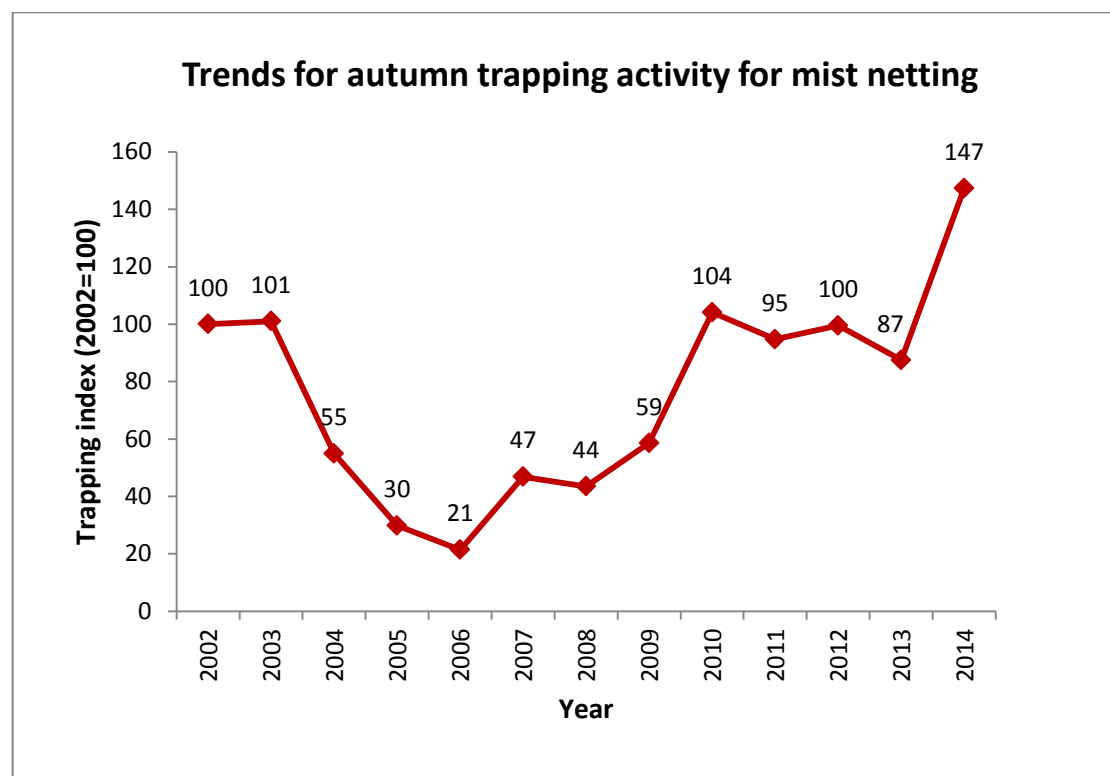


Figure 2 Trends for autumn bird trapping activity with the use of mist nets across 104 squares

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

	Multiplicative trend	Standard error	95% confidence interval	Significance
All squares	1.0613	0.0168	0.032928	Moderate increase (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 1.06 calculated above indicates an overall increase of 6% per year in mist netting activity.

Mist netting activity for autumn 2014 has increased significantly, recording a **47% increase this autumn compared to 2002** (index value of 100). As shown in the graph above, trapping activity for this autumn has reached record breaking levels since the start of the surveillance programme. In comparison to the findings of last year, there has been a reversal in the overall picture, from the positive decrease of last year to the disappointing increase of this year – if one compares the indexes of 2013 and 2014 an increase of 68% has taken place.

Figure 3 summarises autumn mist netting activity under different jurisdictions applying the same 'Linear trend model using the stepwise approach' in the TRIM program. The sample of 104 squares surveyed at various seasons during the surveillance programme includes 80 squares within the Republic of Cyprus (RoC), 19 within the Dhekelia Sovereign Base Area (SBA) and 5 squares that cover areas in both jurisdictions (referred to as 'Joint' squares). In autumn 2014, 35 squares within the Republic of Cyprus, 13 squares within the SBA and 2 'Joint' squares were randomly selected and were covered. It is noted that a minimum number of squares needs to be surveyed in order for the TRIM program to produce reliable and robust results for the long term trapping activity levels at a jurisdiction level, hence the higher % of covered squares within the SBA compared to the Republic areas, following the recommendation of RSPB senior conservation scientist Mr Simon Wotton. For the analysis shown in Figure 3, we have excluded the 5 'Joint' squares that are part of the total sample of 104 squares, in order not to skew the account for neither the RoC nor the SBAs, i.e. any mist netting activity found in 'Joint' squares has not been included.

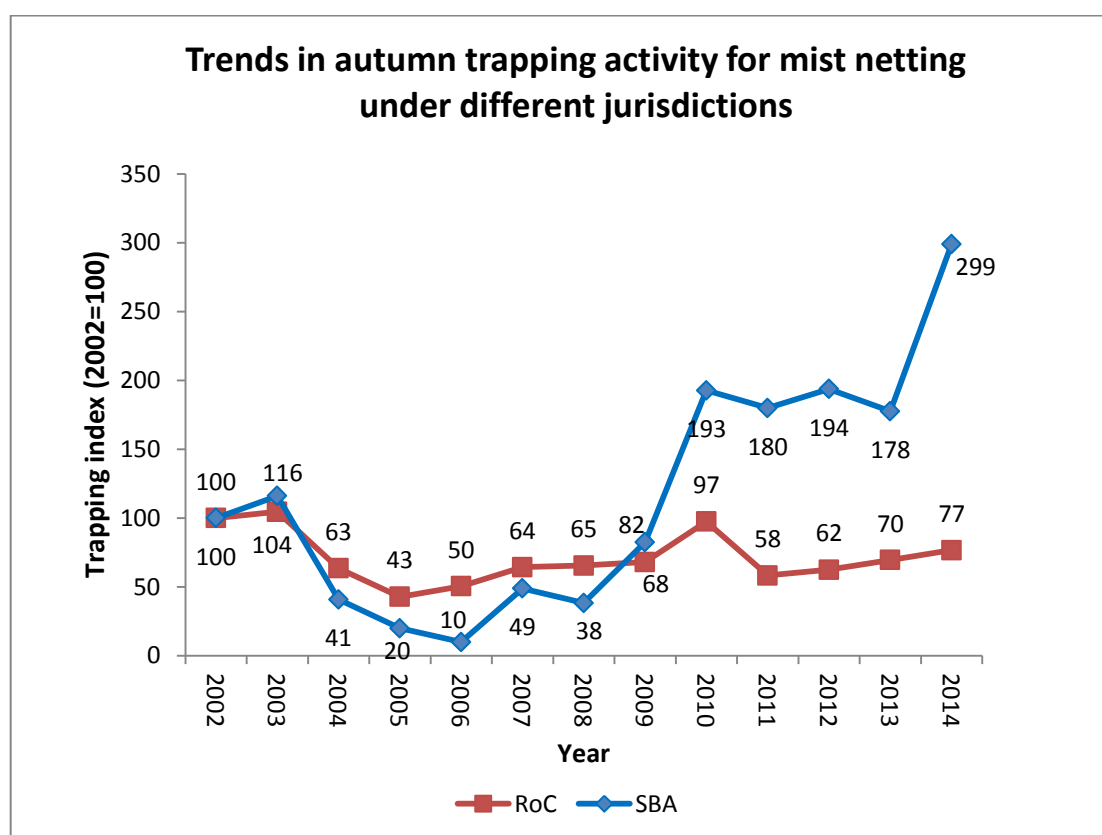


Figure 3 Trends in trapping activity for mist netting within the Republic of Cyprus and within the UK Dhekelia Sovereign Base Area.

Table 2 Statistics for trends for autumn trapping levels based on Figure 3

	Multiplicative trend	Standard error	95% confidence interval	Significance
RoC squares	0.9923	0.019	0.03724	Stable
SBA squares	1.1663	0.046	0.09016	Strong increase (p<0.05)

- For the Republic areas, autumn 2014 mist netting activity showed a slight increase of 10% compared to autumn 2013 (by comparing index value difference from 77 to 70). **In comparison to 2002 there has been a decrease of 23% for autumn 2014.** The multiplicative trend value of 0.99 is indicating a stable, no change situation for the Republic areas overall.
- For the SBA areas, autumn 2014 mist netting activity showed an increase of 68% compared to autumn 2013 (by comparing index value difference from 299 to 178. **In comparison to 2002 there has been an increase of 199% for autumn 2014.** It should be noted that the SBA Administration has questioned these statistics in its feedback provided to BirdLife Cyprus regarding this report, as well as the potential number of more than 900,000 birds killed within the Dhekelia SBA areas (this estimate is based on the BirdLife survey findings, as described on page 10 above). In its feedback the SBA Administration has noted that it does not accept the survey findings of BirdLife Cyprus.
- Overall it is clear from Figure 3 that mist netting activity has increased dramatically within the Dhekelia SBA and is much higher compared to the Republic, a pattern that has held in recent years, primarily due to the mist netting hotspot of Cape Pyla.

As for the Republic the situation is better in terms of mist netting activity in comparison to the SBAs, however the observed increasing pattern since 2011 should alert the enforcement agencies in order to take measures to avoid further worsening. Furthermore the Republic areas are a real hotspot for limestick use, as confirmed by the survey data of other environmental NGOs (CABS and MBCC) and by the enforcement data provided from competent authorities (see section below). In addition, the main economic incentive of organised trappers i.e. the restaurants serving *ambelopoulia*, are found primarily in the Republic, hence the Cyprus authorities have a major role to play in clamping down on the supply – demand business chain.

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 6 officers (used to be 10 police officers in 2011-2012 but resources have been reallocated)
- SBA Police Anti-Poaching Unit is a team of 5 officers to cover the Eastern Dhekelia Sovereign Base Area.

Table 3 summarises the enforcement data of the 3 competent authorities regarding illegal bird trapping for the months of August, September and October, the main period for bird trapping in Cyprus, for years 2011 - 2014.

Table 3 Summary of illegal bird trapping statistics of the competent authorities for the months of August, September and October for years 2011 - 2014

	Game & Fauna Service – Larnaca & Famagusta district ²				Eastern SBA Police Anti- Poaching Unit ³				Cyprus Police Anti- Poaching Unit ⁴			
<i>Years</i>	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014
No of prosecutions	54	58	76	57	23	21	22	28	N/A	22	N/A	27
No of trappers arrested	57	70	78	64	23	22	22	30	N/A	NA	N/A	27
No of mist nets¹	204	311	287	235	361	275	227	184	N/A	116	N/A	116
No of limesticks¹	2,550	5,372	3,830	1,577	290	314	516	256	N/A	4,799	N/A	3,950

N/A: Not available

Note 1: The total number includes both trapping paraphernalia (mist nets and limesticks) collected as court evidence when an arrest takes place and confiscations.

Note 2: Data provided from Game & Fauna Larnaca & Famagusta district officer (December 2014).

Note 3: Data provided from Intelligence analyst of Eastern SBA Police (November 2014).

Note 4: The Cyprus Police Anti-poaching unit worked in close cooperation with the CABS during their autumn 2014 survey camp (from 15th September to 12th October), hence the enforcement data are the same with the trapping paraphernalia reported by CABS (see footnote 6).

- Game & Fauna Service – Larnaca & Famagusta district: The enforcement data for autumn 2014 show a lower number of arrests, a lower number of mist nets confiscated and a much lower number of limesticks confiscated compared to autumn 2013 season. Overall the results for autumn 2014 are similar to autumns 2011 & 2012 and the enforcement action of the Game Service is acknowledged by BirdLife Cyprus, considering the limited sources available. However it appears that the Game Service has not been as effective as last autumn in terms of arrests and/or confiscations, considering that there has been a steady increase in trapping activity based on the findings of BirdLife Cyprus (see Figure 3). The low number of limesticks confiscated is also disappointing; particularly if one were to consider that the majority of limesticks are found within Republic controlled areas. From the enforcement data of the Cyprus Police it is obvious that the Republic is still a hotspot for limestick use, of the order of thousands every autumn, contributing to large scale killing of migratory birds, and a zero tolerance approach must be applied to both mist nets and limesticks.
- SBA Police Anti-Poaching Unit – Dhekelia Sovereign Base: The enforcement data show a higher number of arrests and a lower number of confiscated mist nets and limesticks for autumn 2014 compared to the previous autumn seasons. The efforts of the SBA Police are acknowledged as it has succeeded in more prosecutions for autumn 2014 compared to previous years, despite the limited resources available (the unit comprises of only 5 SBA Police officers).
 - It is apparent that the SBA Police has put more focus on prosecutions rather than confiscations this season. This is an encouraging outcome since an arrest / prosecution is in general a more effective deterrent than a confiscation as it is recorded as a criminal offence if the suspect is found guilty.
 - However the lower number of mist nets confiscated compared to 2013 (for the period August to October), as well as the general declining trend, is also evident. BirdLife Cyprus realises that investing more resources on arresting trappers is more time consuming than confiscating trapping paraphernalia, however it is very disappointing that during the main trapping season (August to October 2014) only 1 clearance operation was undertaken in the mist netting hotspot area of Cape Pyla, on the 9th September 2014. BirdLife Cyprus congratulated this clearance operation at the start of the trapping season with a Press Release¹⁰ and called upon the SBA Administration to continue these clearance operations on a very regular basis during the main trapping period (September to October) in order to have a deterrent impact on trapping activity. However no further clearance operations took place for this period, in contrast to the 4 clearance operations that were undertaken during August – October 2013 (3 in August and 1 in late October). According

¹⁰ BirdLife Cyprus press release, dated 11th September 2014.

http://www.birdlifecyprus.org/upload/2014_09_11BirdLifeCypruswelcomesSBAantitrappingoperationEN.pdf

to the latest SBA Police statistics provided, more clearance operations took place in November and December 2014 (1 and 2 respectively), as well as 7 more trappers were arrested and 263 mist nets were confiscated for these two months – the large number of confiscated mist nets is particularly noticeable.

- BirdLife Cyprus acknowledges that clearance operations require lots of resources, however they are an important tool for deterring / disturbing the industrialised mist netting activity that takes place in Cape Pyla. It is our belief that such clearance operations should be undertaken more regularly and better timed during the main trapping period of September and early October, in order to have a higher impact on mist netting activity during the migratory period.
- Cyprus Police Anti-Poaching Unit: During the Autumn 2014 trapping season this enforcement agency worked closely with the CABS organisation, which undertook its survey camp from mid-September to mid-October 2014. The results of this cooperation included 27 prosecutions (1,771 limesticks and 50 mist nets were confiscated as court evidence) and 37 confiscations (2,179 limesticks and 66 mist nets were confiscated), a very encouraging outcome. These results are even better than the autumn 2012 season (when Cyprus Police and CABS cooperated closely again) when 22 prosecutions took place and hundreds of mist nets and thousands of limesticks were confiscated.

From the enforcement data it is clear that nowadays illegal bird trapping is taking place on an industrial scale, with confiscated limesticks between the 3 competent authorities (Game and Fauna Service, Cyprus Police and SBA Police) and the located ones reported from environmental NGOs exceeding 6,000, with the majority of them found in the Republic. The large number of confiscated mist nets, which was more than 530 mist nets, is also alarming.

Table 4 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. It is noted that 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 for net classification - and sites where limesticks were found) and were reported to the competent authorities for further action.

Table 4 Summary of trapping reports provided to competent authorities from BirdLife Cyprus during Autumn 2014

	Game and Fauna Service – Larnaca & Famagusta			SBA Anti-Poaching Police Unit			Cyprus Police Anti- Poaching Unit		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Number of reports	50	43	33 ⁴	52	38	40	none	3	13 ⁴
Prosecutions / Arrests	17 (34%)	19 (44%)	8 ⁴ (24%)	9 (17%)	8 (21%)	6 (15%)	N/R	1 (33%)	2 (15%) ⁴
Confiscations¹	10 (20%)	8 (19%)	11 (33%)	22 (42%)	18 (47%)	5 (15%)	N/R	N/A	N/A
Clearance² / Nothing³	23 (46%)	16 (37%)	14 (42%)	21 (40%)	12 (32%)	29 (70%)	N/R	N/A	N/A

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.

Note 4: Two sites were reported to both the Game Service and the Cyprus Police – both reports resulted in prosecutions and they are accounted for in the statistics of both enforcement agencies shown above. The feedback for these two sites was provided from the Game & Fauna Service and is used to calculate the % value for the Cyprus Police.

The above table highlights that the cooperation and information exchange between the Game & Fauna Service and BirdLife Cyprus has been quite successful (58% success rate), with 24% of the reports resulting in prosecutions and 33% in confiscations of mist nets / limesticks / calling devices. In comparison to autumn 2013, the success rate is slightly less (for autumn 2013 it was nearly 65%, with a split of 44% in prosecutions and 19% in confiscations). It is noticeable that fewer prosecutions and more confiscations took place for autumn 2014 in comparison to previous years. The response rate to BirdLife Cyprus reports (based on the feedback provided) was relatively good, ranging from 1-2 days to a week – clearly this can be further improved but it also highlights that resources are stretched.

With regards to the Dhekelia SBA Police Anti-poaching unit, around 30% of the BirdLife Cyprus reports resulted in prosecutions (15%) or confiscations (15%). This total success rate of 30% is lower than previous years, when the total success rate, i.e. prosecutions and confiscations, was 68% for 2013 and 59% for 2012. The noticeable drop in confiscations during 2014 is also worth noting. It is apparent that the SBA Police has put more focus on making arrests (as seen in Table 3) this season, and BirdLife Cyprus acknowledges that it is more time consuming to make an arrest than to confiscate trapping paraphernalia. However it is disappointing that only one clearance operation was undertaken in the mist netting hotspot area of Cape Pyla (early September), while last year a total of four were undertaken between August to October. The response time of the SBA Police unit (based on the

feedback provided) varied from one week to a month, a clear indication that resources are stretched. BirdLife Cyprus believes that the SBA Police Anti-poaching unit must not be burdened with other tasks and should focus solely on this issue, at least during the main trapping season between August to October, if a serious decrease in trapping activity levels is to be achieved within the SBAs.

As for the Cyprus Police Anti-poaching unit, BirdLife Cyprus reported 13 cases where illegal bird trapping activity was detected. To this date no feedback has been provided to BirdLife Cyprus, therefore it is not possible to assess the effectiveness of this agency with regards to BirdLife reports. However the enforcement results for autumn 2014 (see Table 3) show that during the CABS camp (mid-September to mid-October) the Cyprus Police had on average one arrest and one confiscation per day, indicating that resources are stretched for this unit as well.

BirdLife Cyprus received many reports from the general public of active trapping sites. All the reports were provided to the competent authorities and in some cases they resulted in arrests or confiscations.

Social and political attitudes

Illegal bird trapping was covered extensively by the national media in the last few months, which overlapped with the main trapping season. At the national level bird trapping was covered in newspaper articles and radios, most of them supportive of the anti-trapping effort and highlighting the non-selective and large scale killing of birds. On many occasions the newspaper coverage reported the successful arrests of trappers by the Game Service, Cyprus Police or SBA Police in different districts (Larnaca, Famagusta, Limassol, Pathos), indicating that wildlife crime is widespread on the island (still the main trapping areas are Larnaca and Famagusta districts). Bird trapping in Cyprus was on the focus of international media too, with the international known TV channel Al Jazeera writing an article about the documentary 'Emptying the skies'¹¹.

As part of its anti-trapping awareness campaign, BirdLife Cyprus organised a screening of the above mentioned documentary on 15th September 2014 in Nicosia, the first one in Cyprus. This documentary is directed by Douglas Kiss and Roger Kiss, based on a magazine essay written by noted best-selling novelist Jonathan Franken for 'The New Yorker' in July 2010¹² and widely republished around the world, chronicles the rampant poaching and bird trapping of migratory songbirds in southern Europe and in particular Cyprus, Italy and France. The event was a great success, with more than 100 people coming to watch the film. After the screening a discussion took place with the following guests on the panel: Mrs

¹¹ 'Emptying the skies - Activists brush with the law and the mafia in their bid to rescue songbirds from ending up on European dinner tables'. 6/11/2014, Al Jazeera.

<http://www.aljazeera.com/programmes/witness/2014/11/emptying-skies-201411681814511798.html>.

¹² 'Emptying the Skies'. July 2010. The New Yorker Magazine.

<http://www.newyorker.com/magazine/2010/07/26/emptying-the-skies>.

Ioanna Panayiotou, Environment Commissioner, Mrs Maria Tsotsi, Representative of the Office of the Commissioner for Administration (Ombudsman), Mr Petros Anayiotos, Representative of the Game and Fauna Service, Mr Klitos Papastylianou, Representative of CABS, and Dr Claire Papazoglou, BirdLife Cyprus Executive Director. The discussion clearly confirmed that a consistent 'zero tolerance policy' and the implementation of the Strategic Action Plan (StAP) against illegal bird trapping are a prerequisite for tackling the problem, as well as the continuation of monitoring and awareness raising actions.

A similar conclusion was highlighted by the report prepared by the Ombudswoman on the illegal trapping of birds in Cyprus, which was released on 27th May 2014 (Ombudswoman, May 2014). The report was the result of a complaint submitted by the Committee Against Bird Slaughter (CABS) and Foundation Pro Biodiversity (SPA) against the Ministry of Justice and Public Order, following the sudden termination of the collaboration between the two international environmental organisations and the Cyprus Police Anti-poaching Unit. The report investigated illegal bird trapping in Cyprus and interviewed all the key stakeholders, including BirdLife Cyprus. The Ombudswoman report highlighted that *'...the policy of the competent authorities for zero tolerance needs to be stable, without any exceptions or flexibility and that it needs to progress from declaration to implementation, regardless of tensions or reactions that may reoccur'* and recommended the completion and the implementation of the Strategic Action Plan within 2014, which would hopefully be the tool for turning illegal trapping into a *'socially unacceptable activity'*. The particular report received a lot of media attention, both in newspapers and on TV.

During 2014 BirdLife Cyprus witnessed the imposition of deterrent court fines such as jail sentences for the first time in Cyprus, an encouraging outcome that courts have started to consider bird offences as a serious wildlife crime. At the end of May 2014 the Dhekelia SBA court sentenced a trapper to 3 months in prison for the illegal possession of wild birds, while a few months earlier the Episkopi SBA court had sentenced another bird trapper to 2 months imprisonment and a fine of €700 for trapping wild birds for the purpose of illegal trade as cage birds. Both court decisions are milestone cases and the SBA courts have taken a big step forward in imposing deterrent court penalties. BirdLife Cyprus would like to see now a continuation of such deterrent court decisions at the SBA courts and the Republic courts in line with a 'zero tolerance' policy against wildlife crime.

Apart from the imposition of deterrent court sanctions for bird trapping offences, another positive outcome for 2014 had been the vindication of the activists of the Committee Against Bird Slaughter (CABS) on 2 court cases (March and May 2014), who were wrongfully accused of trespassing and causing damage to private property. These court decisions gave justice to the legal activities and efforts of environmental organisations to put an end to illegal bird trapping, discarding any false accusations of 'trespassing' usually claimed by suspected bird trappers. More details on these milestone SBA court jail sentences and the CABS court cases can be found in the Spring 2014 trapping report of BirdLife Cyprus (section 'Social and political attitudes' - BirdLife Cyprus, July 2014).

Another encouraging result on the ground has been the start of the uprooting of acacias in the mist netting hotspot of Cape Pyla. BirdLife Cyprus congratulates the SBAs for starting the acacia clearance operation in Cape Pyla, which started in late November¹³ and continued into December 2014 and resulted in the clearance of an area with acacia patches. This is most definitely very encouraging and BirdLife Cyprus warmly supports this initiative, and would like to call upon the SBA Administration to continue with the acacia removal in the more central, hard-core trapping areas of Cape Pyla. Clearly the removal of an invasive, alien species such as the acacia (*Acacia saligna*) would require a long term investment of resources and a management plan for the entire area, and the SBA Administration has made progress on designating the whole area as a Special Area of Conservation (SAC). BirdLife Cyprus is very supportive of this action and is willing to contribute in the areas that it has expertise and knowledge in.

Moreover, a positive outcome has also been the restart of the cooperation between the Cyprus Police and the organisation CABS for autumn 2014. It is noted that their cooperation was terminated abruptly during spring 2013 when a pro trapping lobby group in the Paralimni town complained about all the enforcement action that was taking place in the Famagusta district (read section 'Social and political attitudes' - BirdLife Cyprus, January 2014). The significance of the cooperation between enforcement agencies and environmental NGOs in tackling illegal bird trapping is stressed in the Ombudswoman report (May 2014) and is something that should be further strengthened in the future.

However it has been very disappointing that there has been no progress in the adoption of the Strategic Action Plan (StAP) against illegal bird trapping by the Republic of Cyprus competent authorities i.e. the Game and Fauna Service and the Cyprus Police. BirdLife Cyprus sent the StAP document for adoption to all the key stakeholders at the end of April 2014, but to this date there has been no official answer. Hence the lack of political will is still evident and BirdLife is hoping for a change, particularly as the adoption and implementation of the StAP is something that the authorities have also promised to the EU Commission. It is noted that the SBA Administration has been very positive regarding the StAP and has adopted the strategy since May 2014.

It is also highly worrying that on numerous occasions Facebook users have been posting comments or even pictures of themselves eating *ambelopoulia* in restaurants or at home. In one instance, a politician even posted on his account in early November 2014 that he had a party at a restaurant eating a forbidden 'delicacy', suggesting that they were eating *ambelopoulia*. BirdLife Cyprus has reported these incidents to the Game and Fauna Service but it appears that the evidence just on Facebook material would not be sufficient to build a case to prosecute these individuals. Regardless of whether a prosecution is possible or not, these incidents reflect the social attitude towards the issue, which still considers bird trapping as an acceptable activity, even though the majority are aware that it is an illegal activity.

¹³ Bases begin work removing acacia trees at Pyla range. Cyprus Mail, 25/11/2014. <http://cyprus-mail.com/2014/11/25/bases-begin-work-removing-acacia-trees-at-pyla-range/>.

4. Discussion

Illegal bird trapping activity with the use of mist nets and limesticks has seen a dramatic increase in the last few years based on the survey data from the systematic surveillance programme of BirdLife Cyprus and other data sources (enforcement data from competent authorities, survey data of other environmental NGOs). Mist netting activity for autumn 2014 reached record levels, and in comparison to 2002 (reference year for the TRIM analysis) autumn 2014 survey data showed an increase of 47% in mist netting activity (if one compares the indexes of 2013 and 2014 an increase of 68% has taken place). Enforcement data are also indicating that the use of limesticks is extensive, with more than 4,500 confiscated limesticks located by competent authorities¹⁴ and environmental NGOs during autumn 2014. Given that trapping levels had decreased significantly in the period 2004-2006 (the lowest was recorded in autumn 2006 by -79% compared to 2002, see Figure 2), this current situation is a disastrous loss of conservation ground.

The first screening of the documentary 'Emptying the Skies', organized by BirdLife Cyprus in September 2014 in Nicosia, was very successful and from the panel discussion it was restated that a consistent 'zero tolerance policy' is the only way forward in eradicating this problem. The Ombudswoman report on illegal bird trapping (27th May 2014) concluded with the same key message and stressed that the completion and implementation of the Strategic Action Plan against illegal bird trapping should take place within 2014, in order to start changing public attitude and to turn trapping into a '*socially unacceptable activity*'. This is the first time that an independent body, which is not an environmental NGO, voices out strongly and clearly the same recommendations as BirdLife and other organisations have been calling upon for many years with regards to illegal bird trapping.

Political will to some extent has been shown both from the Republic of Cyprus (restart of the cooperation between Cyprus Police and the CABS organization) and the SBA Administration (acacia removal in Cape Pyla in November and December 2014 and imminent designation of Cape Pyla as a Special Area of Conservation), as well as the imposition of deterrent court fines (jail sentences in SBA courts). However if Nicosia and London are serious about tackling this problem at its root, then it is necessary to adopt and to start implementing the strategy against illegal bird trapping, which has been stagnant since May 2014 awaiting an official reply from the Republic of Cyprus competent authorities (it is noted that the SBA Administration has already adopted the StAP Final document). It is clear from the current trapping activity levels that the situation is worsening year after year and a joint strategy, where all key stakeholders are actively engaged, is urgently needed to reverse this situation.

¹⁴ This does not take into consideration the enforcement action by the Game & Fauna Service, as no data was provided (see Table 3). However Game & Fauna Service provided feedback to BirdLife Cyprus with regards its reports on trapping sites (see Table 4).

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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 km² 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 km² for Famagusta/Eastern Larnaca area and 111 km² for Ayios Theodoros – Maroni area, bringing the total survey area to 406 km². This was done after preliminary surveys in autumn 2006 found evidence of extensive trapping on the margins of the original (261 km²) 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 km² 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 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 blood stains found next to pole bases



Figure 6: Active Unset Net present (AUN) in acacia plantations managed extensively for mist netting



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 km² 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 autumn 2014

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 autumn 2014

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 springs 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)
- For P (prepared) nets it is assumed that they are active every other day while for ANN (Active No Nets), ASN (Active Set Nets) and AUN (Active Unset Nets) nets it is assumed that they are active every day during the trapping season

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

For nets = [(Total length of P category net rides/2) + (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)
= [(479/2) + 1,952 + 56 + 236] / (12) x (20) x (301/50) x (60)
= **1,495,067** 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)
= 168 x 0.5 x (301/50) x 60
= **30,341** birds caught within the survey area on limesticks

In total 1,525,408 birds could have been killed in mist nets and on limesticks within the survey area during autumn 2014. Assuming that the survey area accounts for 75% of the trapping activity in Cyprus, the bird death toll across Cyprus is:
= 1,525,408 / 75%
= **2,033.877 birds could have been killed in nets and on limesticks across all Cyprus during autumn 2014.**

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).