

Monitoring Report  
by Nature Conservation Egypt



Autumn 2016 – Autumn 2017  
Compiled Report

# Hunting and Trapping Practices in Egypt's Northern Mediterranean Coast



Nature Conservation Egypt  
الجمعية المصرية لحماية الطبيعة



**Nature Conservation Egypt (NCE)  
Responsible Hunting Programme (RHP)**

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# 01

## Executive Summary

For three consecutive years Nature Conservation Egypt (NCE), in cooperation with the Nature Conservation Sector of the Egyptian Environmental Affair Agency (EEAA), initiated the Responsible Hunting Programme (RHP) to conduct various survey activities on the hunting and trapping of migratory birds along Egypt's Northern Mediterranean coast. The main aim of the study was to conduct an initial survey to document the different hunting and trapping practices used by the local communities as well as recording the different bird species caught in coastal trammel nets and the species found at the adjacent markets with their relative abundance during the announced bird migration season. The study was constructed to better understand the scale, dynamics, and potential anthropogenic impacts on migratory birds at designated survey points along Egypt's Northern Mediterranean coast.

The first year of the project (2015) was a preliminary evaluation to pilot and adjust the proposed methodology. This provided the RHP with a qualitative overview of the different types of hunting, their distribution along the coast, and their predominance during the autumn migration season compared to that of the spring.

Accordingly, in the years 2016 and 2017 quantitative survey studies took place during autumn migration season; during September and October of each year, concurrent with the declared hunting season as determined by the Ministry of Environment's annual hunting & trapping regulations. The study objectives was to: 1) Describe the different hunting and trapping techniques used along the entire coast; 2) Provide a quantitative basis for estimates of the lengths and distribution of coastal trammel nets (found between 500 m and 1000 m off the coast); 3) Provide a quantitative basis for estimates of the bird catch using coastal trammel nets; 4) Provide a quantitative estimate of the scale and distribution of non-permitted trapping practices along the coast; 5) Provide a quantitative estimate of the birds sold across different coastal markets as well as document their prices; 6) Investigate the status of hunting and trapping practices within coastal protected areas. Different methodologies were implemented by the RHP team to acquire the necessary data.

Hunting and trapping methods were separated into two types: permitted and non-permitted, as determined by Egyptian regu-

lations. Permitted methods included: Coastal trammel nets, bird-shot shotguns, air rifles, Toraha nets, and Esh traps. Non-permitted hunting and trapping methods included: Trammel nets found beyond 1000 m off the coast (hereafter, Inland Trammel Nets), Shirak traps for falcons, limesticks, Eb nets, Haleeg nets, and Elfa traps. Bird-calling devices were always used with inland trammel nets and limesticks. Hunters who used these particular trapping methods highly depended on the use of the prohibited bird calling devices to increase the bird catch.

Coastal trammel nets were the most widespread form of trapping documented along the coast. Coastal trammel nets were found within 43 out of 65 plots - 66% of the surveyed plots within Zone A of the study design (0-1000 m off the coast); their combined length amounted to approximately 490 km of the total coastline distance of approximately 800 km. All surveyed plots had coastal trammel nets located within 0-500 m from the coast which is not compliant with the governmental regulations that stipulate their placement beyond 500 m mark from the coastline (with an exception to areas urbanized under national developmental projects).

Different trapping practices were documented in 79 (59%) in 2016, and in 85 plots (64%) in 2017 out of the 133 surveyed plots across all the zones of the different blocks, indicating an increase in the occurrence of hunting and trapping practices. Non-permitted trapping activities were documented across all the zones along the surveyed blocks in 36 (27%) plots in 2016 and in 42 plots (32%) in 2017 out of the 133 surveyed plots across all the zones of the different blocks. Haleeg (tree nets) was the most prevalent trapping method found at the surveyed plots during the autumn hunting seasons of both 2016 and 2017.

Examining the blocks, the highest proportion of non-permitted practices was documented between Marsa Matrouh and Dabaa (Block 2) in 2016, and Dabaa to Rasheed (Block 3) in 2017. Examining the zones, the dominant form of non-permitted trapping practices recorded in Zone A was Haleeg nets both in 2016 and 2017. Zone B (1 km – 3 km) had Haleeg nets as the dominant form of non-permitted trapping methods in 2016, whereas in 2017 inland trammel nets were the dominant form. Zone C (3 km – 10 km) had Haleeg nets as the dominant form of trapping methods both in 2016 and 2017.

Surveying coastal trammel nets for bird species richness and abundance was conducted between Marsa Matrouh westwards to Port Said eastwards (Blocks 2 to 5), excluding the area west of Marsa Matrouh (Block 1) and east of Port Said (Block 6). The total estimates of trapped birds in 490 km of coastal trammel nets along the coast are 261,901 individuals in 2016, and 573,064 individuals in 2017 during 60 days of the autumn hunting season. These estimates were extrapolated from data derived from 51 surveyed plots at zone A from blocks 2 to 5. Common Quail, the main target of hunting activities by coastal trammel nets was estimated to compose 148,524 individuals in 2016 (57 % of the total estimates of trapped birds in 490 km of coastal trammel nets), and in 2017 they were 418, 408 individuals (74% of the total estimates of trapped birds in 490 km of coastal trammel nets). In 2016 non-quail species, were estimated to compose 113,377 individual (43% of the total estimates of trapped birds in 490 km of coastal trammel nets), and in 2017 they were 154,656 individuals (27% of the total estimates of trapped birds in 490 km of coastal trammel nets).

The largest estimates of permitted trapped birds (Common Quail) was documented in Rosetta to Baltim (Block 4) in 2016, and Marsa Matrouh to Dabaa (Block 2) in 2017. Block 4 had the most bird estimates trapped in 490 km of coastal trammel nets in 2016 (both permitted and non-permitted) in 2016. Whereas in 2017, Block 2 had the largest estimates of permitted species (Common Quail), and Block 4 maintained the largest estimates of non-permitted species (non-Quail).

The total estimated number of birds sold at 5 markets (Port Said, Damietta, Rosetta, Dabaa, and Marsa Matrouh) during 60 days was 61,877 birds in 2016, and 278,054 birds in 2017. Out of the 20 permitted species to be hunted as per the Egyptian regulations, the highest estimates of sold species in 2016 was the Common Quail (20,281 individuals; 33%), and the second highest was the non-permitted bird Willow Warbler (12,561 individuals; 20%). In 2017, the Willow Warbler (73,151; 26%) was the dominating bird sold at the markets followed by the Common Quail (56,866; 21%). The prices of most of the sold birds increased between 2016 and 2017, which could have been largely influenced by the devaluation of the Egyptian pound.

As per the IUCN Red List, there were three threatened species (Pallid Harrier, Red-Footed Falcon, and Turtle Dove) recorded in 2016's markets, their numbers were estimated to compose 3,659 individuals-6% of total birds found at the surveyed markets. The same three threatened species were documented in 2017's markets, estimated to compose 26,905 individuals-10% of total birds found at the surveyed markets.

Examining the situation at the coastal protected areas, hunting and trapping practices were documented in 4 (50%) out of 8 surveyed plots in 2016, and decreased to 3 plots (38%) in 2017.

The recommendations of the study include the continuation of survey activities to better understand the variation between years and to be able to establish medium to long term trends in hunting and trapping along Egypt's Mediterranean coast. Due to security limitations, block 6 (North Sinai) was not accessible during the years of the study and once possible it should be included among future studies spatial coverage since preliminary site visits revealed a high activity of hunting and trapping practices in this area. The results show that the scale and distribution of non-permitted trapping and hunting practices are alarming and it is therefore necessary that future studies address the numbers and species of birds caught using these methods in addition to coastal trammel nets. The data acquired after two years of the study only represent survey points along the coast. It would be valuable to enhance the study's sampling techniques and increase intervals as well as the duration to be able to establish better estimates and trends to have better representative figures for Egypt's Mediterranean coast.

While committing to adopt a zero tolerance approach to any deliberate illegal killing of birds as stated in the Cairo Declaration (2016)<sup>1</sup>, law enforcement should be accompanied by communications and educational activities in areas with high rates of non-permitted trapping activities. This is essential to set the stage for enforcement measures and facilitate their acceptance and endorsement by local communities. It is advised that enforcement activities be carefully considered when impacting underprivileged local communities on the Northern Mediterranean coast who may depend on migratory birds for nutrition.

According to the current study, bird-calling devices associated with non-permitted trapping methods are observed to contribute to an increase in bird catch, which makes them a possible priority to address in enforcement and conservation measures.

<sup>1</sup> Cairo Declaration on Illegal Killing, Taking, and Trading of Migratory Birds in the Mediterranean Region-2016 (Convention on the Conservation of Migratory Species of Wild Animals-United Nations Environment Programme)

# 02

## Introduction

### 2.1 Background

The hunting of migratory birds is a long-lasting tradition in the region of North Africa and the Middle East. For thousands of years, Egyptians have been taking part in hunting activities, specifically during autumn migration. These hunting activities used basic hunting techniques and minimal tools. As a result of population increase and technological developments, hunting practices have become more widespread and intensive,

leading to an increase in illegal and/or unsustainable hunting of migratory birds. This includes the indiscriminate harvesting of a variety of bird-species, including Golden oriole, Willow warbler, Turtle dove, Collared dove, Red-backed shrike, Common nightingale, and a number of wheatear species.





## 2.2 Egypt's importance for migratory birds

Approximately 381 species have been documented in Egypt. Egypt lies in a strategic location for migratory birds, as it connects Africa and Asia, and is Africa's eastern-most coast on the Mediterranean Sea, thus acting as an important flyway for migratory birds. Egypt's Mediterranean coast is home to a variety of natural ecosystems and habitats that are crucial for the survival of birds during their migration. There are a total of 34 areas internationally recognised as Important

Bird & Biodiversity Areas (IBAs) in Egypt, 9 of which are located on the Mediterranean coast. Additionally there are a total of five wetland lakes along the coast. Although only two of them have been declared as Ramsar sites (wetlands of international importance), all the wetlands need to be managed sustainably and conserved according to the Ramsar Convention to which Egypt is a member.



## 2.3 Legalities of Bird Hunting and Trapping in Egypt

Egypt is a signatory to all of the major conventions and agreements that aim to conserve biodiversity and migratory species. Many of the stipulated obligations have been revered by the Egyptian Constitution of 2014, and integrated into Egypt's Environmental Conservation Law (4/1994), its executive regulations, and the relevant ministerial decrees that manage and regulate hunting practices on annual basis. While most of the laws and regulations aim to reduce illegal hunting and trapping practices, it is the enforcement of said laws and regulations that has proved to be a challenge. The Egyptian Environmental Affairs Agency (EEAA) is responsible for issuing hunting and trapping regulations in accordance to local and international laws. However, it is the local government administrations that are mostly responsible for issuing the necessary permits for hunting and trapping along the coast, as well as following up with law enforcement to ensure compliance with the EEAA's regulations.

While sustainable hunting practices are already a priority of the EEAA, they are not yet a priority for local governmental administrations responsible for implementing and enforcing laws and regulations, leading to insufficient enforcement on the ground. Additionally, the poor economic conditions endured by local communities along the coast decrease the feasibility of enforcement due to the lack of economic and nutritional alternatives to migratory birds.

As mentioned above, the Egyptian Ministry of Environment issues an annual decree consisting of hunting regulations which specify the permitted species and trapping techniques, as well as regulations on how nets are set up (i.e. 25% of total area allocated for nets should be kept without nets, to allow for safe passage), banning the use of bird-calling devices and decoys, and releasing any non-permitted birds caught in the nets.

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## 2.4 NCE's Responsible Hunting Programme (RHP) & the International Taskforce Addressing Bird Trapping in Egypt

In the past decade, hunting and trapping practices increased drastically, with the entire coastline hosting a wide array of unregulated hunting activities. Between 2011 and 2013, extensive international media coverage surfaced regarding the seemingly illegal and/or unsustainable hunting and trapping practices along Egypt's entire coast, bringing local and international attention to the issue. While previous small-scale research had been conducted on hunting and trapping activities, there seemed to be very wide gaps in knowledge, as well as lack of appropriate actions being taken to manage the situation. As a result, an international taskforce was formed to

address bird trapping in Egypt, represented locally by Nature Conservation Egypt (NCE) and the Egyptian Environmental Affairs Agency (EEAA), in coordination with the secretariat of Birdlife International, the African-Eurasian Waterbird Agreement (AEWA), the Convention on Migratory Species (CMS), as well as representatives from the Nature & Biodiversity Conservation Union (NABU) and the German Federal Ministry for Environment. This resulted in the formation of a plan of action to address bird hunting and trapping along Egypt's northern Mediterranean coast.

## 2.5 Plan of Action to Address Bird Hunting and Trapping in Egypt - Objectives

The main purpose of the plan of action is to better understand current bird trapping practices, and to implement suitable measures to end illegal and unsustainable practices. For this to be achieved, four main objectives were set:

- **Objective 1:** To increase knowledge of the scale, conservation impact, socio-economic and legal aspects of bird trapping
- **Objective 2:** To ensure that effective legislation and regulations are in place and are properly enforced
- **Objective 3:** To build capacity of Government institutions, NGOs and local communities to effectively address the bird trapping issue.
- **Objective 4:** To increase awareness locally, nationally & internationally, in order to promote bird conservation.

Under the scope of Objective 1 of the action plan, the first expected result was to regularly obtain and analyse reliable data on the scale of trapping practices, with a specific focus on coastal trammel nets, along Egypt's Mediterranean coast. This was done through the establishment of a monitoring programme.





# 03

## Goals & Objectives of the Monitoring Programme

### 3.1 Overall Objective

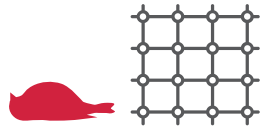
The study aims to provide realistic and impartial data on the state of bird trapping along Egypt's Mediterranean Coast. This was done with a specific focus on the use of coastal trammel nets along 800 km of the coast starting west of the Suez Canal all the way to Egypt's western border with Libya. More specifically, coastal survey aimed to provide an initial assessment of the scale and distribution of the different hunting and trapping techniques used along the coast, the bird catch in coastal trammel nets, and the bird species sold at markets as well as their prices.

This data was collected by NCE's Responsible Hunting Programme (RHP) monitoring team over three years; the first year (2015) consisted of preliminary scouting, research and testing for the methodology; the second and third years (2016/2017) consisted of the full implementation of the methodology to acquire data to achieve the field objectives highlighted below (section 3.2).

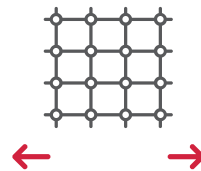
The main aim of the data collected is to better guide policy, legislation, education and enforcement, as well as ensuring the wellbeing of local communities.



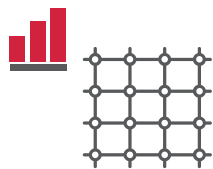
## 3.2 Study Objectives



Describe the different hunting and trapping techniques used along the entire coast



Estimate length and distribution of coastal trammel nets



Estimate the richness and abundance of bird species caught using coastal trammel nets



Estimate the scale and distribution of illegal trapping practices along the coast



Estimate the richness, abundance, and prices of bird species sold across different coastal markets



Surveying hunting and trapping practices at coastal protected areas

# 04

## Description of Hunting and Trapping Methods Along Egypt's Mediterranean Coast

This section will provide a description of the different hunting and trapping methods documented along the coast. These methods are split into two groups: (4.1.) Permitted hunting/trapping methods, and (4.2.) Non-permitted trapping methods. Legality is determined by Egypt's Law for the Environment 4/1994 and the Ministry of Environment's annual decree to regulate hunting. In both cases, hunting and trapping activities are mostly restricted to autumn season.





## 4.1 Permitted Hunting and Trapping Methods

This section will list and describe the hunting and trapping methods that are permitted and regulated by the annual hunting decree issued by the Ministry of Environment during the designated hunting season in autumn of every year:

### 4.1.1 Coastal Trammel Nets (Munsub)

Coastal trammel nets; trammel nets found between 500 m and 1000 m off the coastline, are located all along the coastal provinces, stretched using vertical wooden pillars along the coastline mainly targeting migratory Quail in Autumn. Coastal trammel nets can reach heights of up to 3 meters. Nets consist of two layers with different sized openings: the first layer measuring 3x3 cm openings, and the second measuring 17x17 cm openings. Upon collision with the net, a bird will find itself trapped in a pocket formed by the entanglement of both layers.

According to the annual hunting regulations, coastal trammel nets can only be placed at least after 500 meters from the shore, and each 1000 meters of nets should have 250 meters of gaps to allow for the passage of birds. In areas urbanized under national developmental projects, coastal trammel nets are exceptionally permitted to be deployed before the 500 m mark from the coast.

Permits for these nets are issued by a combination of governmental bodies on the local government scale. Coastal trammel nets are intended only for catching Quail, and regulations which stipulate that any other birds should be instantly released or taken to the nearest national parks office if rehabilitation is required. Coastal trammel nets can only be set up during the duration of the hunting season determined by the annual hunting regulations (usually beginning of September to mid-November). Illegal bird-calling devices are not regularly used with this coastal trammel nets because of their close proximity to the sea, which causes interference with the sound produced.



#### 4.1.2 Birdshot Shotguns (Khartoosh)

These shotguns are tailored for hunting, measuring between 12-20 mm bore, with the 12 mm being the most commonly used. The number of shots per birdshot cartridge range between 0 – 10 gauge. Decoys and bird-calling devices are used to attract birds within shooting range. Trees, shrubs and artificial hides are used as shooting hideouts by many hunters. Higher gauges are used for smaller birds, while the lower gauges are used to hunt larger birds. Birdshot shells produced locally are made out of lead, while imported shells are made from stainless steel or plastic, to avoid lead poisoning. Birdshot shotguns are more common further west along the coast, particularly after Alexandria and amongst Bedouin communities.

Birdshot shotguns can only be used if two sets of licenses are acquired: the first license is to bear arms, and the second license is specifically for hunting. In light of security concerns, both licenses have been difficult to acquire since 2011, increasing the occurrence of unlicensed shooting.



#### 4.1.3 Air Rifles

Air rifles use pressurized air to shoot pellets. They are intended to shoot small birds and doves. They are widespread and easily accessible, as they do not fall under restrictions or regulations. Many young hunters use air rifles for hunting birds.

A number of species are hunted using air rifles, including Common quail, Red-backed shrike, Great grey shrike, Isabelline wheatear, Nightingale, Corncrake, Hoopoes, Turtle dove, Collared dove, Palm dove, Spotted flycatcher, Short-toed lark, Redstart and Blackstart.

Air rifles are permitted for hunting by Egypt's hunting regulations, and do not require permits or licenses to be used.



#### 4.1.4 Toraha Nets

Toraha is a traditional hunting method where nets, similar to fishing nets, are thrown by hunters/trappers at shrubs and small trees to capture birds. Nets vary in size but can reach a total area of 10 m<sup>2</sup>.

A number of species are trapped using Toraha nets, including Common Quail, Corncrake, Willow Warbler and Nightjar.

Toraha nets are permitted by Egyptian hunting regulations, due to their traditional nature and small scale of trapping, and can be found all along the coast.



#### 4.1.5 Nest (Esh) Traps

Esh traps (named as such due to its similar appearance to a nest) are among the oldest bird trapping techniques, and are rarely used today. Esh traps are created by collecting a number of reeds, tying them together to create a vertical structure (40-50 cm) with a circumference of 30-40 cm, and placing them on the ground. The small structure is covered with one layer of netting (small openings of 3 cm<sup>2</sup>), leaving the southern side of the structure open to allow birds in from one side. Smaller birds will enter these structures for shelter and are trapped in the process.

Remains of unused structures could be found between 100-200 m from the coastline. Historically, Esh traps were used to target Corncrake. However, no trapped species were recorded inside or outside sampling squares. They are permitted by Egyptian hunting regulations, due to their traditional nature and small scale of trapping.





## 4.2 Non-permitted Trapping Methods & Techniques

This section will list and describe the non-permitted trapping methods used along the coast that have not been permitted or regulated by the annual hunting decree issued by the Ministry of Environment:

### 4.2.1 Inland Trammel Nets

Seemingly identical to the coastal trammel nets (4.1.1.), inland trammel nets are placed further inland between 1-5 km from the coastline. Bird-calling devices are almost always used to attract birds into the nets.

The length of individual inland trammel nets ranges between 12-16 m, however, unlike coastal trammel nets, inland trammel nets do not exceed a total of 10-12 connected nets. They are sporadically spread across the coast and separated from other inland trammel nets that belong to other hunters/trappers. Numerous species can be caught using inland trammel nets, including Common Quail, Golden Oriole, Nightingale, Short Toed lark, and Turtle Dove.

Inland trammel nets are not permitted by Egyptian hunting regulations. Unlike coastal trammel nets, no permits can be acquired to set up inland trammel nets, and the use of bird-calling devices as a supporting method is explicitly prohibited.



#### 4.2.2 Falcon Traps (Shirak)

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This is one of the most popular trapping methods for catching birds of prey, specifically falcons. It is a contraption that consists of interwoven nylon strings and is applied to another bird's back (disguised prey) to attract then trap the falcons as they try to hunt the bird. Doves, pigeons or quails are used as bait and stabilized to the ground with the Shirak on its back. As a falcon attempts to hunt the bait, its talons become entangled in the trap, leaving the falcon grounded. Another type of Shirak is applied to Lanner Falcons and Kestrels, in order to catch larger falcons like the Peregrine falcon and the Saker falcon, seeing that the latter occasionally take prey from the former.

This technique is used all along the Egyptian coast and is fueled by a seasonal demand from the Arabian Gulf for birds of prey. It is not permitted to take falcons from the wild using any technique.



### 4.2.3 Limesticks (Mokheet)

Limesticks are among the oldest traditional trapping techniques that are still being used today across Egypt and the Mediterranean. This trapping technique consists of long twigs (40–60 cm) covered in a sticky glue made from the fruit of the Assyrian plum tree. The glue-covered twigs are placed in small shrubs in open areas. Birds attracted to the shrubs will get caught between the gluey twigs.

Limesticks are typically located along the eastern areas of the coast, specifically east of Alexandria, west of Damietta and in the vicinity of Lake Burullus. Limesticks are typically found between 1–5 kilometres from the coast.

A wide variety of songbirds are targeted and/or caught using this technique, including Willow warblers, Red-backed shrike, Nightingale, Wheatears, Spotted flycatchers, etc. Their effectiveness is highly increased by the use of bird-calling devices. Limesticks are not permitted by Egyptian hunting regulations as they are not included in the list of permitted hunting methods.



### 4.2.4 Elfa Traps

This trapping method mainly targets live waterbirds. It consists of a net that is stabilized in a body of water, surrounded by bird decoys. This net is connected to a string that is held by the trapper, and once a bird descends into the vicinity, the string is pulled and the net closes in to trap the bird. This method is mostly found further east along the coast, specifically North Sinai, Damietta, and Kafr El Sheikh.

This method was not permitted by the annual hunting regulations, and is therefore considered an illegal form of trapping.





#### 4.2.5 Haleeg Nets

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Haleeg nets are large mist nets consisting of one layer, covering medium and large sized trees, with a south-facing opening to let birds in. On the northern side of the net, rocks are used to pin down the nets to the ground at a distance from the tree, enabling hunters/trappers to easily access the trapped birds. Some of the trees include Casuarina, Tamarex, Acacias and Olive trees. Occasionally, decoys and bird-calling devices are used to attract birds into the Haleeg nets.

Haleeg nets are typically found on the western areas of the coast, specifically between Hammam and Salloum. Some of the species targeted and/or caught by Haleeg nets include: Turtle dove, Golden oriole, Palm dove, Chiffchaff, Willow warbler, Red-backed shrike, and Nightingale. Haleeg nets are not permitted by Egyptian hunting regulations as a method of hunting, therefore are considered illegal.





#### 4.2.6 Eb Nets

Similar to the Esh traps 4.1.5., Eb net is a one layer net covering shrubs or dried branches in a pyramid-like shape, with an opening facing south to allow birds in. Birds get trapped in the net as they cannot escape from the northern side of the bush. Eb nets can be found in predominantly arid regions of the Egyptian coastline, specifically west of Alexandria. This trapping method can usually be found further inland, between 3-5 km from the coastline.

Modern Eb nets are not included in the permitted hunting methods, therefore are considered illegal.



#### 4.2.7

##### Bird-calling Devices

While they are not an independent trapping technique, bird-calling devices are aiding tools used all along the Egyptian coast to magnify the effectiveness of illegal trapping techniques used further inland, most notably limesticks and inland trammel nets. Without the use of bird-calling devices, many of the illegal trapping techniques would become obsolete and less profitable, according to many of the trappers' accounts. Bird-calling devices are rarely used on coastal trammel nets due to the interference caused by the sound of the waves along the coast.

Bird-calling devices are usually devices that are specifically purposed for hunting/trapping, however they can take different forms such as the use of mobile phones/MP3 players and portable speakers.

Bird calling devices are explicitly prohibited by the annual hunting regulations issued by the Ministry of Environment. Yet, they still can be purchased in many of the hunting shops along the coast and in the city.





# 05

## Survey of the Scale & Distribution of Hunting and Trapping Methods

### 5.1 Objectives

The objective of this survey component is to assess the scale and distribution of the different trapping and hunting practices along Egypt's northern Mediterranean coast.



## 5.2 Methodology

### 5.2.1 Spatial Division of the Coastline into "Blocks"

The coast was split into a total of six "blocks" from west to east, with each block spanning 160 km along the coast (Figure 5.2a).

- Block 1 extends from Salloum to Mathany Bahareya
- Block 2 extends from Mathany Bahareya to Dabaa
- Block 3 extends from Dabaa to Rosetta
- Block 4 extends from Rosetta to Baltim
- Block 5 extends from Baltim to Port Said
- Block 6 extends from Port Said to Rafah in North Sinai

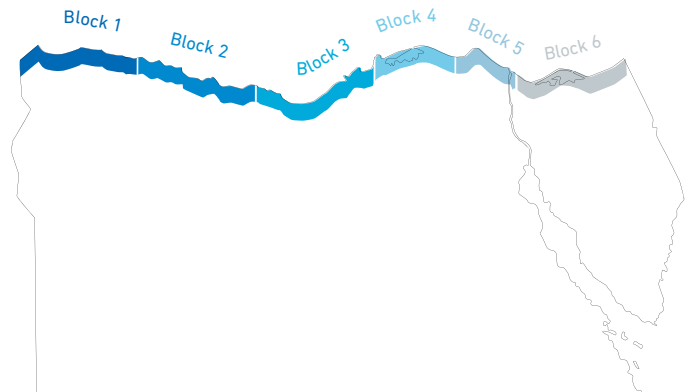


Figure 5.2a: Map showing the distribution of survey blocks along Egypt's Mediterranean Coast

### 5.2.2 Division of "Zones"

Each block is divided into three "zones" (Zones A, B and C) from north to south, based on the nature of trapping practices:

- Zone A: 0 - 1 km from the coast
- Zone B: 1 - 3 km from the coast
- Zone C: 3 - 10 km from the coast

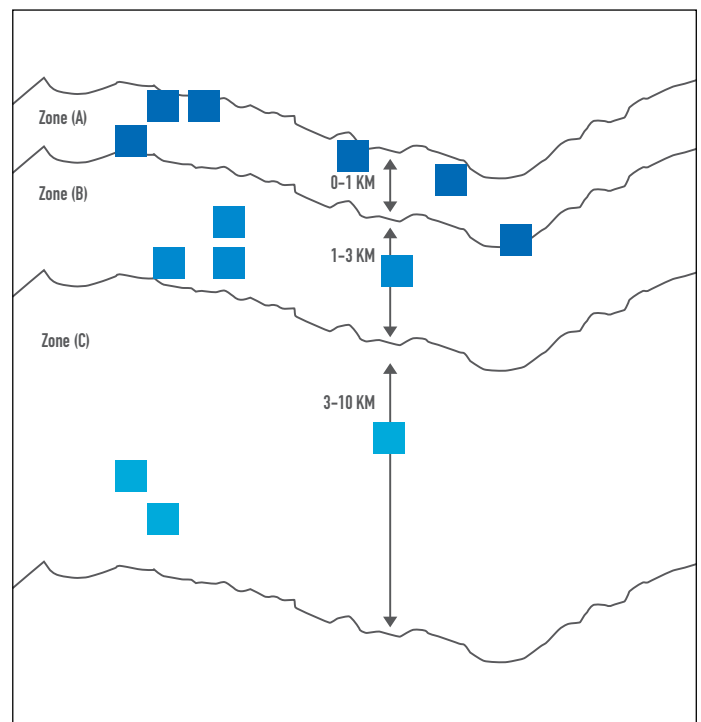


Figure 5.2b: Illustration of coastal zonation at each survey block

5.2.3  
Survey Methodology  
to Record Hunting and  
Trapping Methods

A total of 133 random survey plots were allocated using GIS along the coast between Blocks 1-5; block 6 was eliminated from the study design due to inaccessibility for security restrictions. These plots were stratified between Zones A, B & C; the highest proportion of sampling plots were allocated to the northern-most zone (A) and the lowest proportion were allocated to the southern-most zone ( Figure 5.2c). This was done to stratify the sample to account for the concentration of coastal trammel nets observed at Zone A during the preliminary qualitative phase of the study. Accordingly, the distribution of sample plots per zones was as follows:

Zone A = 65 plots / 50% of the total plots along the coast;  
 Zone B = 43 plots / 30% of the total plots along the coast;  
 Zone C = 25 plots / 20 % of the total plots along the coast.

The survey plots were distributed equally among the blocks with 28 plots allocated to each block, except for block 5 which had 21 plots (Figure 5.2c and Table 5.2a). Each of the plots was visited once within 15 days of the autumn hunting season (between September to November). A team of surveyors drove along the coast between every plot in each of the Blocks. At each plot, a surveyor walked in a belt transect southwards for 1 km, covering 50 m to the east and 50 m to the west of the transect line to take records of hunting and trapping methods (Figure 5.2d). Upon encountering coastal trammel nets extending beyond the belt transect dimensions as shown in figure 5.2d, only the part lying within the belt transect was recorded and its dimensions were measured (Figure 5.2d).

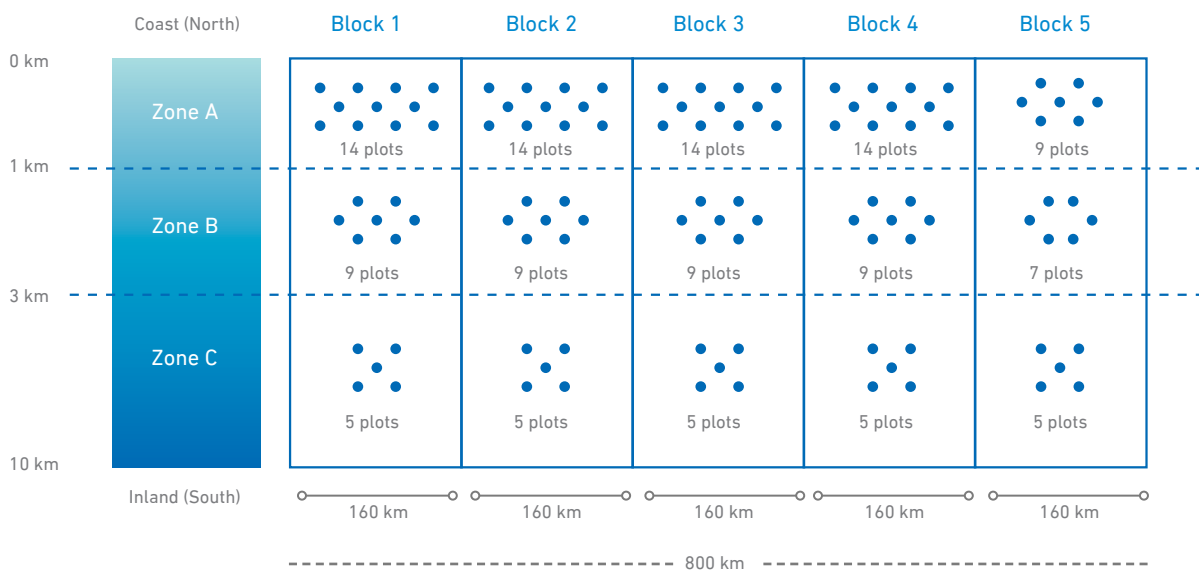


Figure 5.2c: Distribution of survey plots across the zones along the five blocks

	Block 1	Block 2	Block 3	Block 4	Block 5	Total
Zone A	14	14	14	14	9	65
Zone B	9	9	9	9	7	43
Zone C	5	5	5	5	5	25
Total	28	28	28	28	21	133

Table 5.2a: Summary of the number of surveyed plots per zone along the five blocks

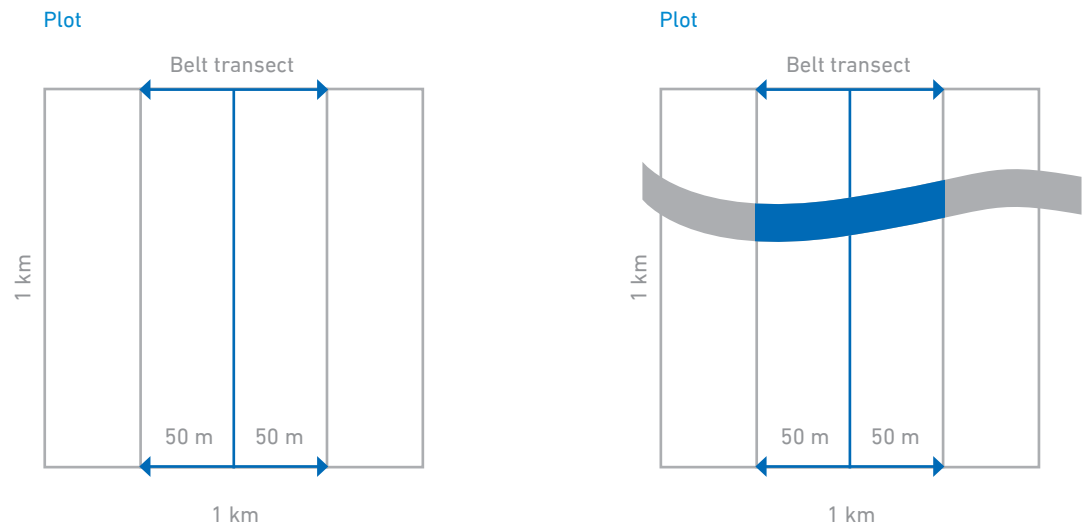


Figure 5.2d: Left, Illustration of belt transects within a survey plot where documentation and measurement of coastal trammel nets and other hunting and trapping methods were taken. Right, Illustration of a coastal trammel net at surveyed plot. Only the part lying within the belt transect was recorded (blue) and its dimensions were measured.

## 5.3 Results of the Scale & Distribution of Hunting and Trapping Methods

### 5.3.1

#### Distribution of Permitted vs. Non-permitted Hunting and Trapping Methods

(Table 5.3a and Figure 5.3a)

Out of a total of 133 random points monitored along the coast, hunting or trapping activities were recorded within 79 plots (59%) in 2016, and 85 plots (64%) in 2017.

Out of the total plots, no hunting or trapping practices were documented in 54 plots (41%) in 2016, neither in 48 plots (36%) in 2017.

Coastal trammel nets were the only permitted method recorded within the surveyed belt transects of all the plots; they were documented within belt transects of 43 (32%) plots of total plots both in 2016 and 2017.

Non-permitted trapping activities were documented within belt transects of 36 plots (27%) of total plots in 2016, and within belt transects of 42 plots (32%) in 2017.

Blocks	Non-permitted Trapping					Permitted Trapping
	Limestick	Inland Trammels	Shirak	Haleeg	Eb Nets	Coastal Trammels
<b>2 0 1 6</b>						
Block 1	0	0	0	6	2	7
Block 2	0	0	1	8	0	10
Block 3	0	4	1	3	1	8
Block 4	4	2	4	0	0	10
Block 5	0	0	0	0	0	8
Total	4	6	6	17	3	43
Total Plots Containing Trapping Practices Recorded within Belt Transects in 2016: 79 Plots						
<b>2 0 1 7</b>						
Block 1	2	1	0	0	0	7
Block 2	3	3	3	0	0	10
Block 3	0	4	0	3	4	8
Block 4	0	3	0	6	0	10
Block 5	0	0	0	7	3	8
Total	5	11	3	16	7	43
Total Plots Containing Trapping Practices Recorded within Belt Transects in 2017: 85 Plots						

Table 5.3a: Number of surveyed plots that had records of different permitted and non-permitted hunting/trapping practices during study period in 2016 and 2017

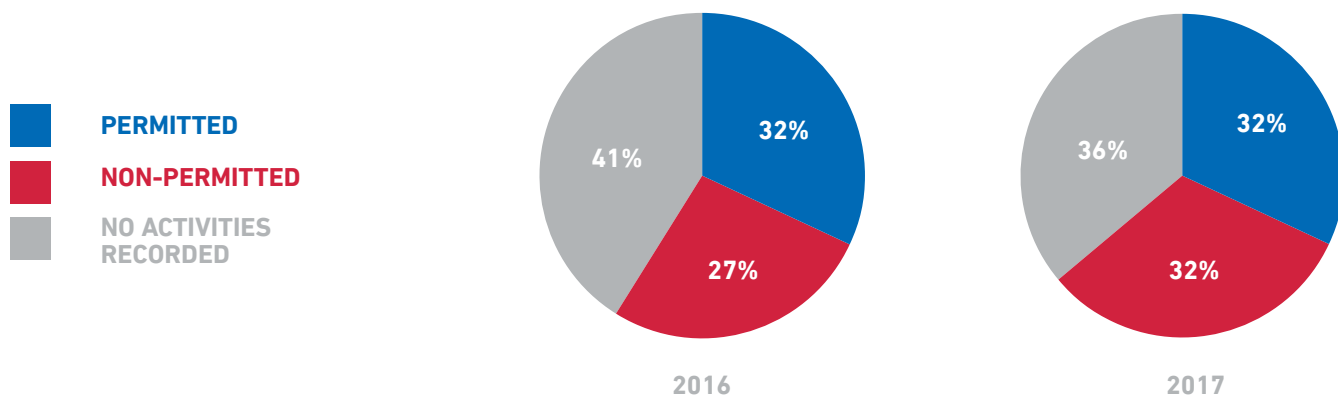


Figure 5.3a: Proportion of surveyed plots having permitted, non-permitted, and no hunting and trapping activities during study period in 2016 and 2017

### 5.3.2 Scale and Distribution of Coastal Trammel Nets

Survey activities over 2016 and 2017 autumn hunting seasons indicated that coastal trammel nets were the dominant method of trapping in Zone A along the different blocks. Nets were found at the same locations within the same plots in both years. This indicates that nets are set up consistently in the same areas every year as per the legal procedures and regulations pertaining to licenses and permits, which are issued to hunters for the same areas of land every year.

All coastal trammel nets had licenses. However, they were all located within 0 – 500 m from the coastline and there were no gaps in between. These findings are not compliant with the Egyptian annual hunting regulations specifying the distance of permitted nets from the coastline (with an exception to areas urbanized under national developmental projects).

Out of the 65 random plots monitored in Zone A along the entire coastline from blocks 1 to 5 in 2016 and 2017, surveyed belt transects at 43 plots (66%) contained coastal trammel nets. The total length of coastal trammel nets found upon surveying belt transects at these 43 plots was 490 km (Figure 5.3b), when they are put together they span 61% of the 800 km surveyed coastline.

The largest lengths of coastal trammel nets recorded within belt transects were documented in plots of blocks 2 and 4, followed by those at plots of block 3 (Figure 5.3b).

Bird-calling devices were not used with coastal trammel nets. It is reported that they are less effective when used close to the sea due to noise produced by sea waves.

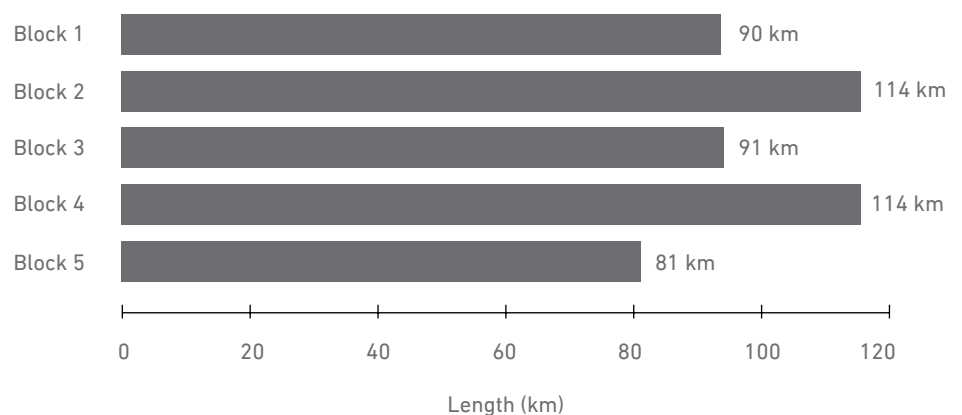


Figure 5.3b: Total Length of Coastal Trammel Nets found within transect belts at survey plots of each block



### 5.3.3 Scale and Distribution of Non-permitted Hunting and Trapping Methods

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Non-permitted trapping methods were documented within belt transects of respective plots in all blocks along the coast, from block 1 to 5.

With the exception of the Shirak (used for catching falcons), 100% of all non-permitted trapping methods in survey plots were accompanied with bird-calling devices to increase their effectiveness, particularly at further inlands.

In 2016, the highest proportion of non-permitted trapping practices was recorded within belt transects of Block 2 plots, whereas in 2017 it was within belt transects of Block 3 plots. This has been attributed to an increase in the use of Haleeg, Eb, and Inland trammel nets.

Haleeg nets were the most documented non-permitted trapping method recorded within belt transects of surveyed plots in both 2016 and 2017, due to its widespread use starting west of Alexandria; corresponding to blocks 1 to 3, (Figure 5.3c).

The largest percentage of non-permitted trapping practices was documented within belt transects of plots at Zone A (0-1000m from the coastline). In 2016, 47% of plots with records of non-permitted trapping practices occurred at Zone A. While in 2017, 51% of plots with non-permitted trapping practices occurred at Zone A (Table 5.3b). In both years of surveying, the largest proportion of the non-permitted trapping practices recorded within belt transects of Zone A plots were Haleeg nets, followed by Limesticks and Inland trammel nets (Table 5.3c).

In 2016, Zone B (1km – 3km from the coastline) contained the second highest proportion of plots with records of non-permitted practices; 33% (Table 5.3b). This decreased to 23% in 2017, bringing Zone B to the having lowest proportion of plots with records of non-permitted practices. Haleeg nets were prominent within surveyed belt transects of Zone B plots in 2016, however decreased by almost a third in 2017. Inland trammel nets, Eb nets and Shirak were the most prominent non-permitted practices recorded within belt transects of Zone B plots in 2017 (Table 5.3b).

In 2016, Zone C (3km – 10km) had the lowest proportion of plots with records of non-permitted practices was 20%, but increased to 26% in 2017, making Zone C the area with the second highest proportion containing plots with records of non-permitted trapping activities (Table 5.3b). Haleeg nets, Shirak, and Inland trammel nets were the dominant forms of non-permitted practices recorded within belt transects of Zone C plots (Table 5.3c).

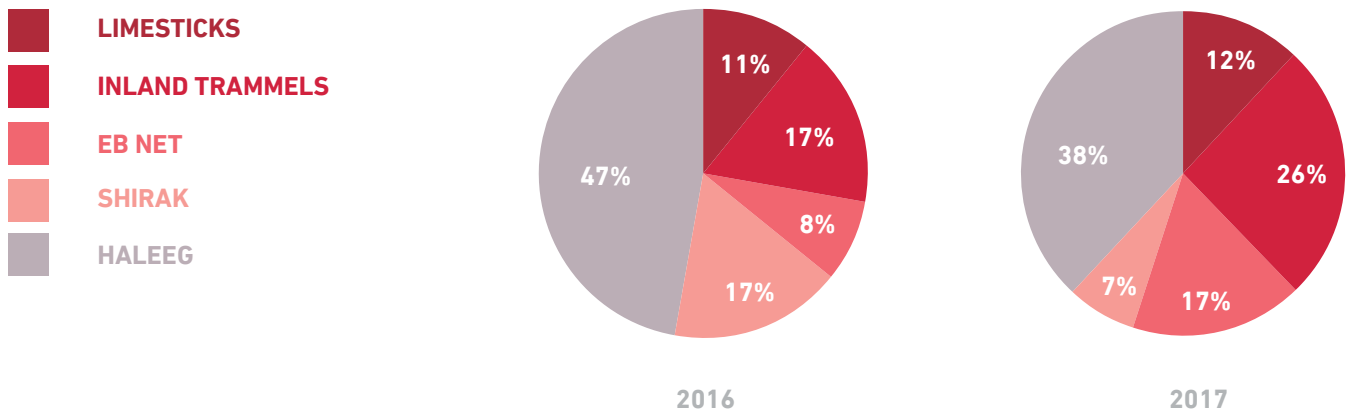


Figure 5.3c: Percentage of plots with incidence of non-permitted hunting and trapping methods at all surveyed blocks

Zones	A	B	C
2016	47%	33%	20%
2017	51%	23%	26%

Table 5.3b: Percentage incidence of plots with non-permitted trapping across the different zones of all the surveyed blocks

	Limestick	Inland Trammels	Shirak	Haleeg	Eb Nets	Total
<b>2 0 1 6</b>						
Zone A	11	8	3	6	19	47
Zone B	0	8	6	5	14	33
Zone C	0	0	0	6	14	20
<b>2 0 1 7</b>						
Zone A	10	10	5	2	24	51
Zone B	0	7	7	7	2	23
Zone C	2	10	5	2	7	26

Table 5.3c: Percentage incidence of plots with records of the different non-permitted trapping methods across the different zones of the surveyed blocks

# 06

## Survey of Bird Catch in Coastal Trammel Nets

### 6.1 Objectives

The main objective of this section is to estimate the richness and abundance of bird species caught in coastal trammel nets during autumn hunting season. Based on observations and quantitative findings of hunting and trapping methods in the previous sections, coastal trammel nets were found to be widely spread along the coast. Coastal trammel nets

were deployed at the same locations in both 2016 and 2017. For this part of the study, coastal trammel nets were surveyed for the abundance and richness of birds caught in both years.



## 6.2 Methodology & Calculations

Referring to the methodology of section 5, surveyors gathered data on coastal trammel nets, which were found at plots of Zone A.

The survey was conducted through walking in a belt transect for 1 km from the North to the South of the plot. Surveyors recorded the quantity and dimensions of coastal trammel nets found (as well as other hunting and trapping methods) within 50 m to the west and 50 m to the east of the belt transect.

\*Since Block 1 had no records of bird data and Block 6 was not accessible, this section addresses only applicable methodology measures from the previous section for blocks 2 to 5 only ( Figure 6.2a)

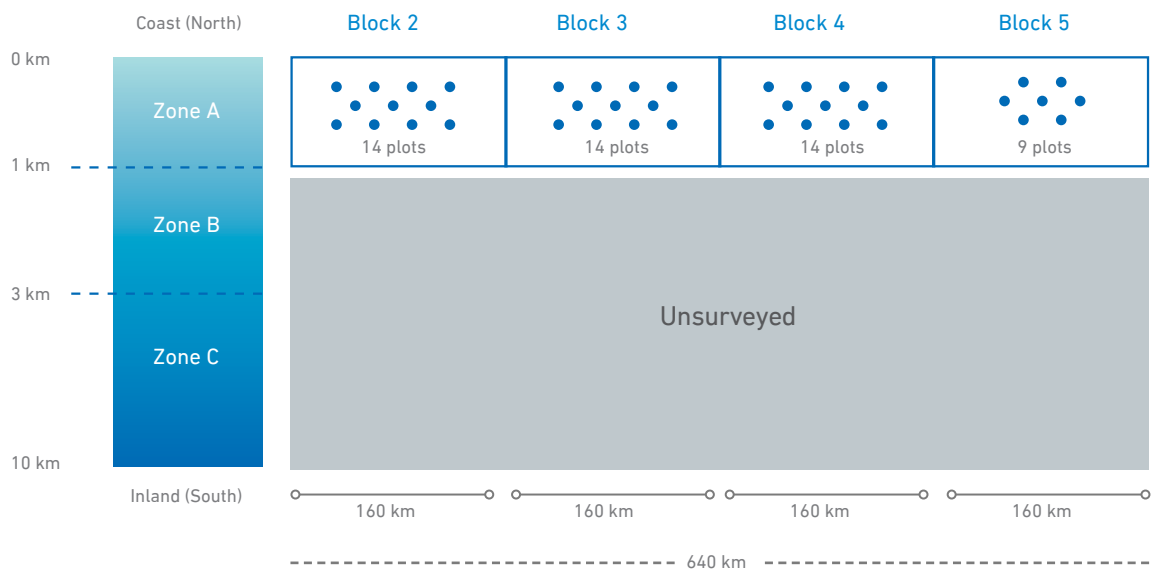


Figure 6.2a: Distribution of survey plots where coastal trammel nets were found and measured across Zone A from blocks 2 to 5

6.2.1  
 Survey Methodology to  
 Record the Bird Species  
 Richness and Abundance  
 Caught in Coastal Trammel  
 Nets

To account for the birds caught in coastal trammel nets, surveyors visited 5 random plots at Zone A of blocks 2 to 5. Out of the 5 visited plots at each block, surveyors chose 2 plots (Figure 6.2b) that had relatively longer coastal trammel nets spanning the entire width of the plot of 1 km from west to east. Each 1 km of coastal trammel nets at the respective plots was designated to be surveyed for all caught birds. Surveyors visited the respective 2 km at the 2 plots of each block for 17 days during the autumn hunting season both in 2016 and in 2017.

Findings were documented on daily basis between 6 am and 12 pm (i.e. peak of hunting activities) along 1 km of coastal trammel nets at each plot. Only nets parts within the 1 km were surveyed as shown in Figure 6.2c.

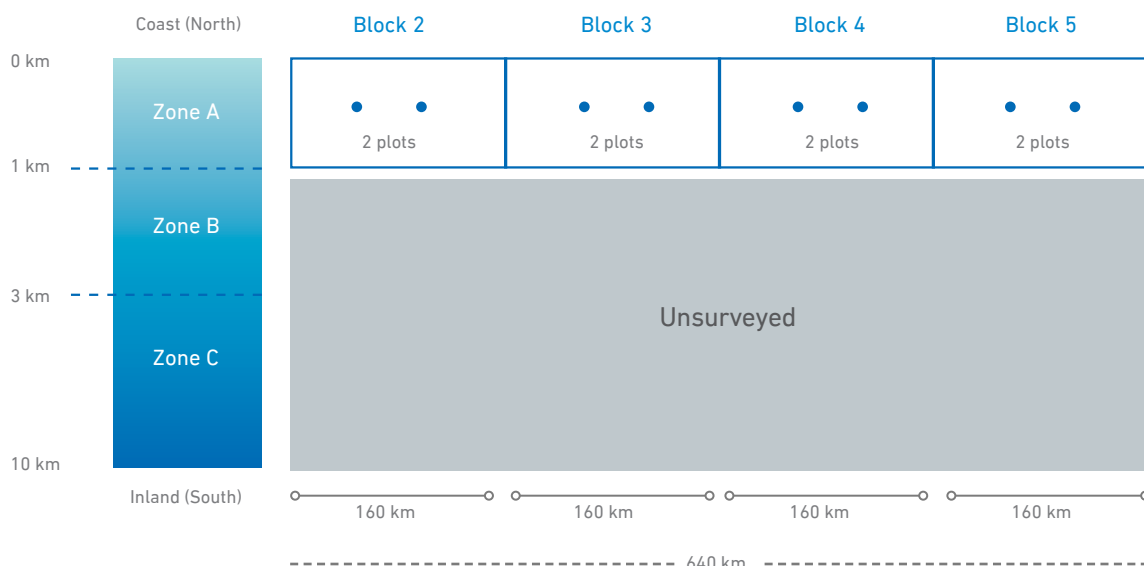


Figure 6.2b: Distribution of the selected 2 survey plots across Zone A of blocks 2 to 5 to record bird species richness and abundance along 1 km of coastal trammel nets at the respective plot

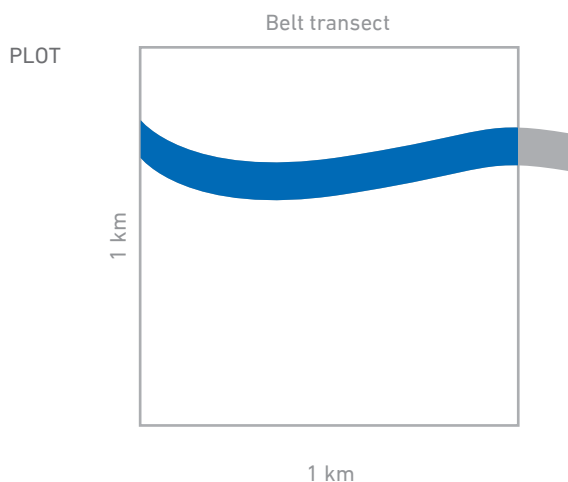


Figure 6.2c: Illustration of surveyed parts of coastal trammel nets in one plot

## 6.2.2

### Calculations of the Estimates of Bird Catch in Coastal Trammel Nets for Each Year

On each of the 17 days of the survey, the average of the total number of each bird species (B) caught from the 2 plots of each block was calculated ( $\delta B_1$  Average catch in 1 km of coastal trammel nets in 1 day at 1 Block). The daily averages were summed and divided by 17, to estimate the number of each bird species caught in one day during the autumn hunting season in 1 km of coastal trammel nets at block X ( $\Delta B$ ).

$$\delta B_1 + \delta B_2 + \delta B_3 + \dots + \delta B_{17} / 17 = \Delta B$$

$\Delta B$  was multiplied by the total length of coastal trammel nets\* previously found at each block, and by 60 (the officially declared number of days during the autumn hunting season) to estimate the total number of each bird species caught in block X during the entire hunting season ( $\Delta B_{60 \text{ Block } x}$ ).

$$\Delta B \times \text{Total Length of Coastal Trammel Nets within Block X} \times 60 \text{ Days} = \Delta B_{60 \text{ Block } x}$$

The total estimate of each bird species caught in all the surveyed blocks during the entire hunting season ( $\Delta B_{60 \text{ Total Estimate}}$ ) was calculated as follows:

$$\Delta B_{60 \text{ Block } 2} + \Delta B_{60 \text{ Block } 3} + \Delta B_{60 \text{ Block } 4} + \Delta B_{60 \text{ Block } 5} = \Delta B_{60 \text{ Total Estimate}}$$

The total estimate of all birds caught in all the surveyed blocks during the entire hunting season ( $\Delta \text{All Birds}_{60 \text{ Total Estimate}}$ ) was calculated as follows:

$$\Delta B1_{60 \text{ Total Estimate}} + \Delta B2_{60 \text{ Total Estimate}} + \Delta B3_{60 \text{ Total Estimate}} + \dots = \Delta \text{All Birds}_{60 \text{ Total Estimate}}$$

\*All trammel nets had an average height of 3m



## 6.3 Results of Bird Catch in Coastal Trammel Nets

### 6.3.1 Overview of Bird Catch and Biodiversity

Data was analyzed according to the methods specified in the previous section and revealed the following:

In 2016 the total estimated bird catch was 261,901 individuals.  
 In 2017 the total estimated bird catch was 573,064 individuals.

These estimates of bird catch for each year represent the number of bird individuals that are expected to be found along a combined total length of coastal trammel nets of 490 km within a combined total area of 5.1 km<sup>2</sup> (total area of all the surveyed belt transects at all the plots of Zone A from blocks 2 to 5) out of a total area of 640 km<sup>2</sup> total area of Zone A across blocks 2 to 5 during the 60 days of the autumn hunting season.

The bird species richness recorded in a total of 8 km surveyed coastal trammel nets was 25 species in 2016 and 35 species in 2017 ( Figure 6.3a). The surveyed 2 km of coastal trammel nets at block 4 had the highest species richness with 17 species in 2016 and 27 species in 2017, which makes findings at block 4 account for more than 50% of the total species richness in both years ( Figure 6.3a). Block 5 followed closely with a species richness of 12 in 2016 and 18 in 2017 ( Figure 6.3a).

To estimate the biodiversity of bird species expected to be caught along 490 km of coastal trammel nets found within the surveyed belt transects, Simpson's Index (1-D) was applied to calculate the species diversity at the respective transects of each block. Results showed that block 4 recorded the highest species diversity trapped in coastal trammel nets with 0.7 on the Simpson's Index in 2016 and 0.8 in 2017 ( Figure 6.3b).

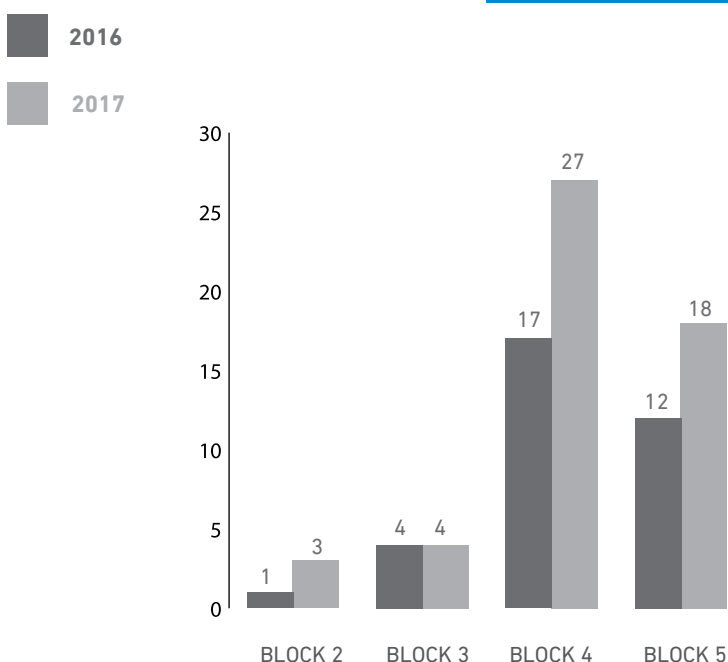


Figure 6.3a: Birds richness caught along 8 km of coastal trammel nets from blocks 2 to 5 during autumn hunting survey in 2016 and 2017

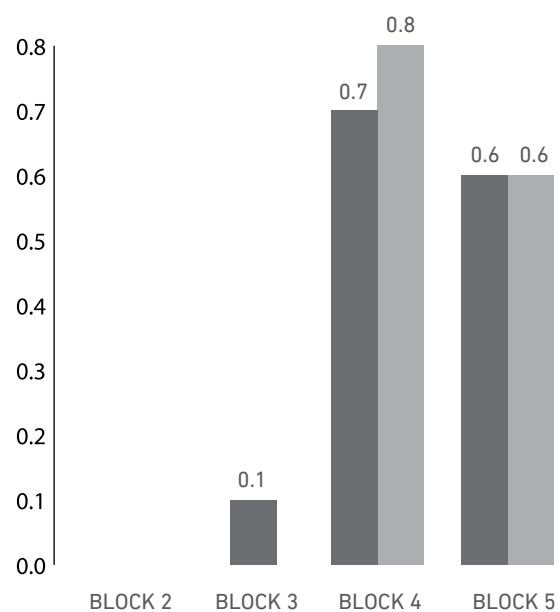


Figure 6.3b: Estimated biodiversity of birds caught along 490 km of coastal trammel nets within surveyed belt transects at blocks 2 to 5 during autumn hunting survey in 2016 and 2017 (Simpson's Index)

### 6.3.2 Permitted vs. Non-permitted Species Caught in Coastal Trammel Nets

Based on Egypt's hunting regulations, issued via an annual ministerial decree by the Ministry of Environment, only 20 bird species are permitted for hunting during autumn hunting season. Common Quail (*Coturnix Coturnix*) is the only permitted bird for trapping using Coastal Trammel Nets, which is the target species of this trapping method.

All the surveyed coastal trammel nets were found before the 500 m mark from the coastline which is exceptionally permitted in urbanized areas under national developmental projects, as per the hunting regulations mentioned in section 4.1.1.

Since assessing the proximity of surveyed coastal trammel nets to urbanized areas was not considered in the scope of this study and surveyed nets were only assessed for bird catch, Common Quails found in nets were considered as a permitted catch until future studies consider this factor.

The following results present the estimation of quail (permitted) vs. non-quail (non-permitted) species expected in 490 km of coastal trammel nets found within surveyed belt transects from blocks 2 to 5 (table 6.3a):

Estimated abundance of Common Quail (permitted species) caught in 490 km of coastal trammel nets:

2016: 148,524 birds over the course of 60 days-57% of trapped birds  
2017: 418,408 birds over the course of 60 days-73% of trapped birds

Estimated abundance of non-quail (non-permitted species) caught in 490 km of coastal trammel nets:

2016: 113,377 birds over the course of 60 days-43% of trapped birds  
2017: 154,656 birds over the course of 60 days-27% of trapped birds

Estimated abundance of Common Quail (permitted species) and non-quail species (non-permitted) caught in coastal trammel nets within surveyed belt transects at the respective blocks (figures 6.3c and 6.3d):

2016: block 4 recorded the largest estimates of both quail and non-quail species with 92,567 and 98,444 individuals respectively.

2017: block 2 recorded the largest estimates of quails with 216,729 individuals while block 4 had the largest estimates of non-quail species with 114,146 individuals.

Bird Type	Block 2	Block 3	Block 4	Block 5	Total / year	Total%
<b>2 0 1 6</b>						
Quail	14,693	27,429	92,567	13,835	148,524	57%
Non-Quail	0	1,524	98,444	13,409	113,377	43%
Total Birds	14,693	28,953	191,011	27,244	261,901	
<b>2 0 1 7</b>						
Quail	216,729	97,454	74,013	30,212	418,408	73%
Non-Quail	3,227	860	114,146	36,423	154,656	27%
Total Birds	219,956	98,314	188,159	66,635	573,064	

Table 6.3a: Estimates of Quail/Permitted vs. Non-Quail/Non-permitted birds caught in Coastal Trammel Nets within surveyed belt transects of per block

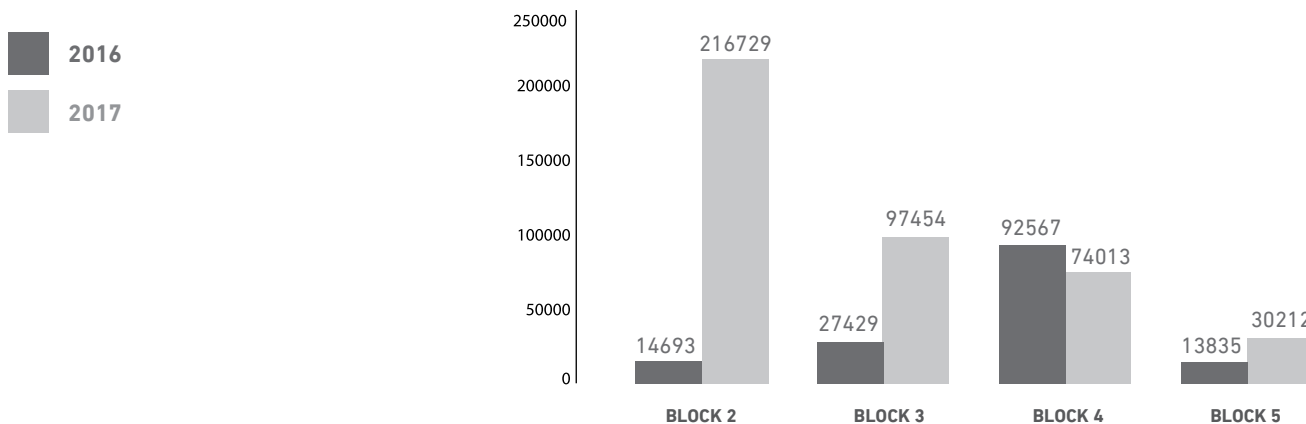


Figure 6.3c: Estimates of Quails/Permitted birds caught in Coastal Trammel Nets within surveyed belt transects of per block

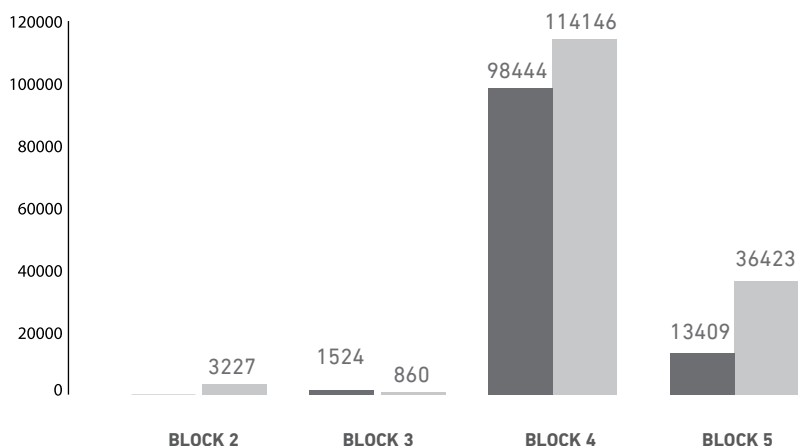


Figure 6.3d: Estimates of Non-Quail/Non-permitted birds caught in Coastal Trammel Nets within surveyed belt transects of per block





# 07

## Survey of Birds Sold at Markets Along Egypt's Mediterranean Coast



### 7.1 Objectives

The main objective of the market survey is to get a preliminary insight of the scale and dynamics of birds sold during the migration season at some of the public markets in proximity

of the respective blocks. This was approached through estimating the bird species richness and abundance found at the markets and documenting their prices.



## 7.2 Methodology & Calculations

### 7.2.1 Market Survey

Surveyors visited 5 main public markets along Egypt's northern Mediterranean coast during autumn hunting season to monitor the trading of migratory birds. These public markets were: Marsa Matrouh, Dabaa, Rosetta, Damietta, and Port Said corresponding to blocks 2,3,4, and 5 respectively.

Each market was visited by one surveyor twice a week during the study period, adding up to 17 visits to the market. Surveyors collected the following data: date and time of data collection, species of birds sold and their numbers, as well as their prices.

### 7.2.2 Calculations

Data was collected for the 17 survey days for the total abundance of each type of bird at all the visited markets. An average abundance for each bird type was derived to represent an average number per day. Each bird's average abundance found at these markets was multiplied by 60 to represent an estimate of each bird abundance throughout the entire autumn hunting season at the visited markets which correspond to the same surveyed blocks mentioned in the previous section.

## 7.3 Results of Assessing Birds Sold at Markets

### 7.3.1 Overview of Sold Birds and their Biodiversity at Surveyed Markets

Data was analyzed according to the methods specified in the previous section and revealed the following:

In 2016 the total estimate of sold birds was 61,877 individuals.  
In 2017 the total estimate of sold birds was 278,054 individuals.

These estimates of sold birds for each year represent the number of bird individuals expected to be found during 60 days of autumn hunting season at the 5 main public markets corresponding to blocks 2 to 5 of the survey area.

Species richness found at the visited coastal markets during autumn migration season was 43 and 62 species in 2016 and 2017 respectively. The highest species richness in 2016 was at Dabaa's market, with a total of 24 recorded species, followed by Alexandria's market with 14 species. The highest species richness in 2017 was at Rosetta's market with a total of 28 species, followed by Dabaa's market with 21 species ( Figure 7.3a).

To estimate the biodiversity of sold birds species at the surveyed markets, Simpson's Index (1-D) was applied to calculate the species diversity at the respective market of each block. Results showed that in 2016 Damietta market (block 5) recorded the highest species diversity with 0.81 on the Simpson's Index in 2016, closely followed by Alexandria Market (block 3) with 0.78 on the index. In 2017, the highest species diversity was recorded at Alexandria Market (block 3) with 0.84 on the Simpson's Index, closely followed by Dabaa Market (block 2) with 0.76 on the index ( Figure 7.3b).

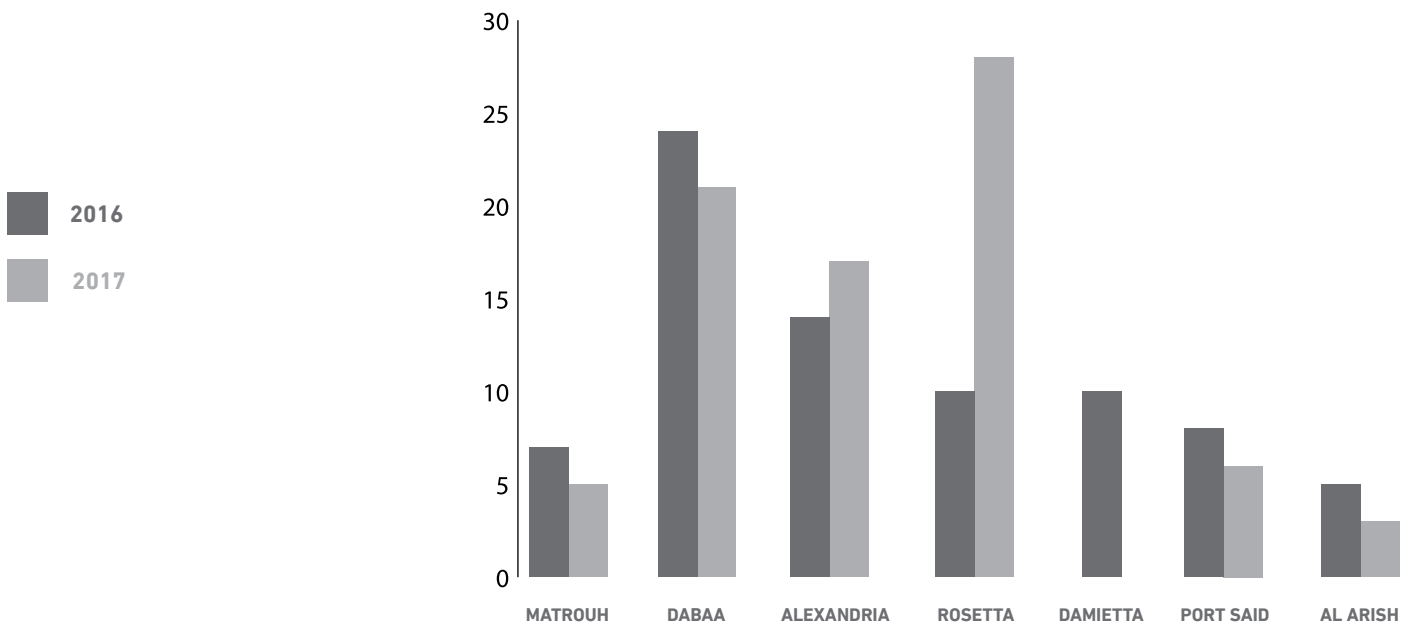


Figure 7.3a: Birds richness sold at the surveyed 5 main coastal markets corresponding to blocks 2 to 5 during 60 days of autumn hunting season in 2016 and 2017

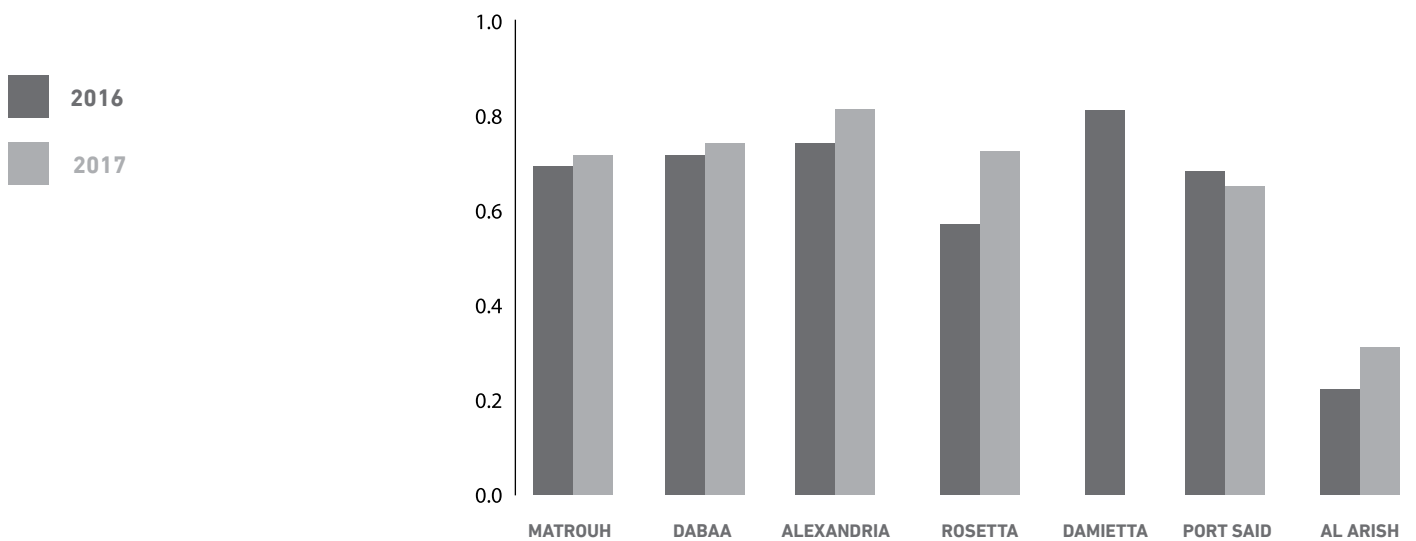


Figure 7.3b: Estimated biodiversity of birds sold at the surveyed 5 main coastal markets corresponding to blocks 2 to 5 during 60 days of autumn hunting season in 2016 and 2017

### 7.3.2 Permitted vs. Non-Permitted Species Sold at Surveyed Markets

This section addresses the abundance of permitted and non-permitted bird species sold at the visited markets during the autumn hunting season, in accordance to Egypt's annual hunting regulations issued by the Ministry of Environment. As previously mentioned, the regulations permit hunting of 20 bird species during the autumn hunting season.

The following results represent the estimation of permitted vs. non-permitted species sold at the 5 main surveyed markets corresponding to blocks 2 to 5:

**Out the 20 species specified in the Egyptian regulations the ratio of all the permitted vs. non-permitted bird species that were sold at the surveyed markets was as follows (figure 7.3c):**

- 2016: Permitted birds were estimated to be 30,423 individuals - 49% of total birds surveyed at markets, while non-permitted birds were estimated to be 31,454 individuals - 51% of total birds surveyed at markets.
- 2017: Permitted birds were estimated to be 100,564 individuals - 36% of total birds surveyed at markets; while non-permitted birds were estimated to be 177,490 individuals - 64% of total birds surveyed at markets.

**Among all the permitted and non-permitted birds sold at the surveyed markets as per the Egyptian regulations, the dominant birds sold at the surveyed markets were as follows (Annex II):**

- 2016: Common Quail (permitted species) was estimated to compose 20,281 individuals for this year, which was the highest proportion of all the sold birds - 33% of total birds surveyed at the markets ( Annex II). Willow Warbler (non-permitted species) was the second highest for this year with 12,561 individuals - 20% of total birds surveyed at the markets .
- 2017: Willow Warbler (non-permitted species) was estimated to compose 73,151 individuals for this year, which was the highest proportion of all the sold birds – 26 % of total birds surveyed at the markets ( Annex II). Common Quail (permitted species) was the second highest for this year with 56,866 individuals - 21% of total birds surveyed at the markets .

**Regarding species declared threatened by the IUCN Red List (table 7.3a):**

- 2016: 3 threatened species were documented in markets, these were: Pallid Harrier (*Circus macrourus*), Red Footed Falcon (*Falco vespertinus*), and Turtle Dove (*Streptopelia turtur*). Their total estimate was 3659 individuals – almost 6% of total birds surveyed at the markets.
- 2017: the same 3 threatened species that were documented in markets in 2016 were documented for 2017. Their total estimate was 26,905 individuals – almost 10% of total birds surveyed at the markets.

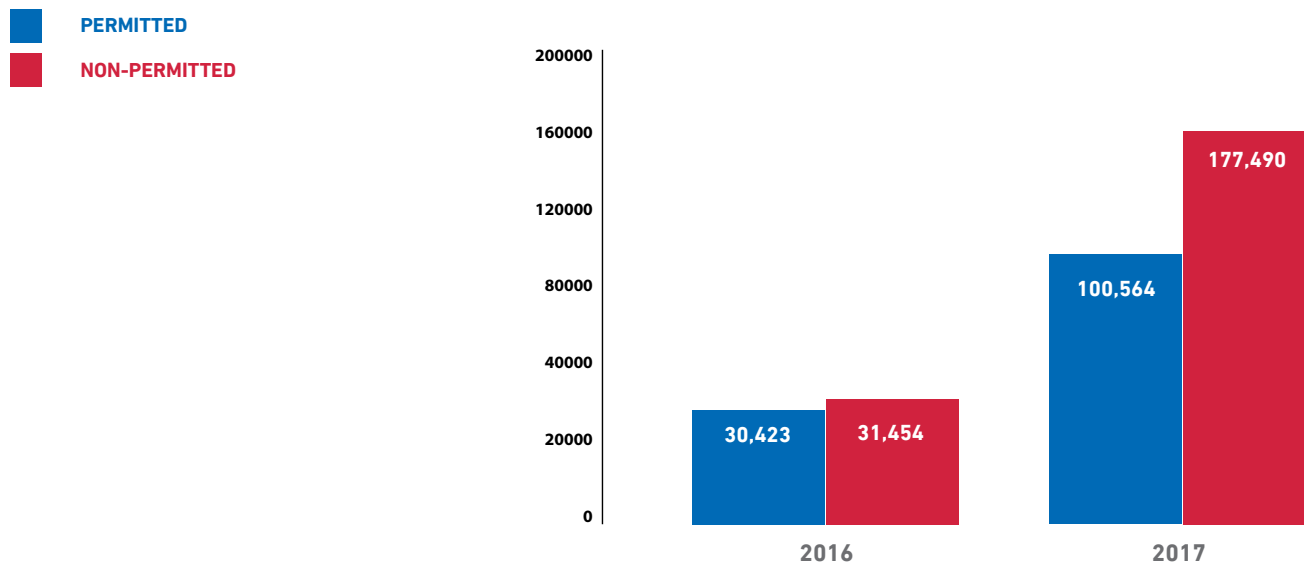


Figure 7.3c: Abundance of Permitted vs. Non-permitted bird species sold at the 5 surveyed markets during the autumn hunting season of 2016 and 2017 as per the Egyptian Regulations

Species	Total Birds in Markets 2016 (60 days)	% of Market	Total Birds in Markets 2017 (60 days)	% of Market
Circus macrourus Pallid Harrier (NT IUCN)	4	0	4	0
Falco vespertinus Red Footed Falcon (NT IUCN)	92	0	56	0
Streptopelia turtur Turtle Dove (VU IUCN)	3,563	6	26,845	10
<b>Total</b>	<b>3,659</b>	<b>6</b>	<b>26,905</b>	<b>10</b>

Table 7.3a: Estimates of IUCN Threatened birds sold at the 5 surveyed markets during the autumn hunting season of 2016 and 2017



## 7.4 Economic Value of Birds at Coastal Markets

A wide range of prices was documented across species during market survey in Autumn 2016 and 2017. However, due to the ongoing improvements made to market survey methodologies, this section will not provide an estimate for the economic scale of bird markets.

- Birds of prey are usually sold for the highest prices of all birds in markets, with a noticeable increase in prices between 2016 and 2017 resulting from the November 2017 devaluation (Annex III). While most Peregrine Falcons, specifically female juveniles, do not end up in the markets and are sold privately, Peregrine Falcons were recorded at markets costing EGP 8,000 in 2017 (Annex III). Lanner Falcons' price specifically jumped from EGP 175 in 2016 to EGP 1900 in 2017, reportedly due to the increasing demand for Peregrine Falcons and the importance of Lanner Falcons in helping trappers catch Peregrines during their migration in autumn.
- With regards to songbirds, Willow Warblers averaged EGP 1 in 2016 and EGP 1.25 in 2017; Red-backed Shrikes averaged EGP 3.25 in 2016 and EGP 4 in 2017; Thrush Nightingale jumped from EGP 1.50 in 2016 to EGP 4 in 2017; Golden Oriole went from EGP 13 in 2016 to EGP 16.50 in 2017 (Annex III).
- Quails and Turtle Doves are among the most demanded migratory birds as they are considered seasonal delicacies: Quails went from EGP 20 in 2016 to EGP 22.50 in 2017; Turtle Doves went from EGP 40 to EGP 47.5 (Annex III).



# 08

## Surveying Hunting & Trapping Activities at Protected Areas

### 8.1 Objectives

The main objective of this section is to determine whether or not hunting and trapping practices occur within the boundaries of four (out of six) coastal protected areas along Egypt's Mediterranean coast.

### 8.2 Methodology

Four protected areas were visited to monitor trapping practices, particularly coastal trammel nets. The four protected areas were: Salloum, Ommayed, Burullus, and Ashtoum El Gamil corresponding to blocks 1,3,4, and 5. Surveyors allocated 2 random plots at each protected area during the autumn hunting season both in 2016 and in 2017 to account for the presence or absence of hunting and trapping methods; a total of 8 plots at 4 protected areas. Upon encoun-

tering any type of trapping method within a designated plot, it was recorded as presence record of a trapping method at the respective plot at the respective protected area.

\*Protected areas corresponding to block 6 (North Sinai) were not accessible.



## 8.3 Results of Surveying Hunting & Trapping Practices at Protected Areas

In 2016, 4 out of the 8 surveyed plots (50%) within protected areas had a record of hunting or trapping activity.

In 2017, 3 out of the 8 surveyed plots (37.5%) within protected areas had a record of hunting or trapping activities. This indicates a reduction from the year before.

In both 2016 and 2017, coastal trammel nets and inland trammel nets were documented in both surveyed plots at Burullus Protected Area.

In 2016, 1 out of the 2 surveyed plots at Ashtoom El Gamil Protected Area had trapping practices (specifically coastal trammel nets). However, in 2017 no activities were recorded in the same plots, showing a decrease in activities.

In both 2016 and 2017, 1 out of the 2 surveyed plots at Ommayed Protected Area had trapping activities, specifically coastal trammel nets.

In both 2016 and 2017, the 2 surveyed plots at Salloum Protected Area had no records of hunting and trapping practices (table 8.3a).

Block Number	Protectorate	Plot	2016	2017	Comments
Block 1	Salloum	1	No Hunting Record	No Hunting Record	-
		2	No Hunting Record	No Hunting Record	-
Block 3	Ommayed	1	Hunting Record (Targeting Common Quail)	Hunting Record (Permitted Nets)	Net L: 400 m x H: 3.30 m
		2	No Hunting Record	No Hunting Record	-
Block 4	Burullus	1	Hunting Record (Targeting Common Quail)	Hunting Record (Permitted Nets)	Net L: 250 m x H: 3.25 m
		2	Hunting Record (Targeting Common Quail)	Hunting Record (Permitted Nets)	Net L: 250 m x H: 2.80 m
Block 5	Asthoum Al Gamil	1	Hunting Record (Targeting Common Quail)	No Hunting Record	Western Side
		2	No Hunting Record	No Hunting Record	Eastern Side

Table 8.3a: Summary of presence and absence of trapping methods found at the surveyed plots at the protected areas



# 09

## Conclusion

This section of the report presents the conclusions from this report into one section, divided by their relevant topics:

### 9.1 Description of Hunting & Trapping Techniques Along Egypt's Mediterranean Coast

- Hunting and trapping practices, both traditional and modern, occur all along the coast every autumn.
- Permitted hunting and trapping methods include: Coastal trammel nets, birdshot shotguns, air rifles, Toraha nets, and Esh traps.
- Non-permitted hunting and trapping methods include: Inland trammel nets, Shirak traps for falcons, limesticks, Eb nets, Haleeg nets, and Elfa traps.
- Bird-calling devices are almost always used with non-permitted trapping methods, as these methods are highly dependent on them to catch more birds.



## 9.2 Scale & Distribution of Coastal Trammel Nets

- All coastal trammel nets are exclusively located in Zone A (between 0-1000 m from the coastline).
- Coastal trammel nets were found within surveyed belt transects of 43 out of 65 plots - 66% of the surveyed plots within Zone A (0-1000 m off the coast). This was the case in both years, indicating that nets were consistently placed in the same locations, which comes in compliance with the legal procedures required for coastal net permits.
- The largest density of coastal trammel nets as dictated by the length, were documented in Block 2 and 4 (Marsa Matrouh to Dabaa; Rosetta to Baltim). Block 3 (Dabaa to Rosetta) closely follows in length of nets.
- All coastal trammel nets usually had permits and were found within 0 – 500 m from the coastline which violates the annual hunting regulations on the distance of permitted nets from the coastline. However, according to regulations the proximity of coastal trammel nets to urbanized areas under national projects development makes their deployment exceptionally permitted before the 500 m mark from the coastline. Since this aspect was not taken into consideration within the scope of this study and hunters had permits, all coastal trammel nets were treated as permitted methods.

## 9.3 Scale and Distribution of Other Trapping Practices

- Trapping practices were documented in 79 plots (59%) in 2016, and in 85 plots (64%) in 2017 out of the 133 surveyed plots across all the zones of the different blocks, indicating an increase in the occurrence of hunting and trapping practices. The remaining plots on the coast contained no records of trapping activities.
- Non-permitted trapping activities were documented across all the zones along the surveyed blocks in 36 plots (27%) in 2016 and in 42 plots (32%) in 2017 out of the 133 surveyed plots across all the zones of the different blocks.
- Different methods of non-permitted trapping were documented in all blocks along the coast (Blocks 1 to 5).
- Bird-calling devices were documented alongside 100% of non-permitted trapping methods in 2017 (excluding Shirak for falcons).
- Haleeg (tree net) was the most prevalent method of non-permitted trapping documented in monitored plots between Autumn 2016 and 2017.
- The highest proportion of non-permitted practices in 2016 was documented within belt transects of Block 2 plots in 2016 and whereas in 2017 it was within belt transects of Block 3 plots. This was attributed to an increased use of Haleeg, Eb, and inland trammel nets.
- The largest percentage of non-permitted trapping practices was documented within belt transects of plots at Zone A (0-1000m from the coastline). In 2016, 47% of plots with records of non-permitted trapping practices occurred at Zone A. While in 2017, 51% of plots with non-permitted trapping practices occurred at Zone A.
- The dominant forms of non-permitted trapping practices in Zone A were Haleeg followed by limesticks and inland trammel nets. Zone B (1km – 3km) fluctuated between Haleeg nets in 2016 and inland trammel nets, Eb nets and Shirak in 2017. Zone C (3km – 10km) was mostly dominated by Haleeg nets, Shirak, and inland trammel nets.



## 9.4 Bird Catch in Coastal Trammel Nets

- Surveying coastal trammel nets for numbers and species of trapped birds was conducted in Blocks 2 to 5, excluding Block 1 and 6.
- The total estimates of trapped birds in a total of 490 km of coastal trammel nets along the coast are 261,901 individuals in 2016, and 573,064 individuals in 2017 during 60 days of the autumn hunting season.
- The bird species richness recorded as trapped in a total of 8 km surveyed coastal trammel nets was 25 species in 2016 and 35 species in 2017.
- The surveyed 2 km of coastal trammel nets at block 4 had the highest species richness with 17 species in 2016 and 27 species in 2017, which makes findings at block 4 account for > 50% of the total species richness in both years. Block 5 followed closely with a species richness of 12 in 2016 and 18 in 2017.
- Common Quail catch was estimated to be 148,524 individuals-57% of the total estimates of trapped birds in 490 km of coastal trammel nets over 60 days 2016, and in 2017 it was estimated to be 418,408 individuals-74%, noting an increase in catch of Common Quail (only permitted species).
- Non-Quail catch (non-permitted species to be caught in coastal trammel nets as specified by Egyptian regulations) was estimated to be 113,377 individuals-43% of the total estimates of trapped birds in 490 km of coastal trammel nets over 60 days in 2016, and in 2017 they were estimated to be 154,656 individuals-27%, noting an increase in catch of non-permitted species.



## 9.5 Birds Sold at Markets Along Egypt's Mediterranean Coast

- Total estimated number of birds sold at markets was 61,877 birds in 2016, and 278,054 birds in 2017.
- Species richness in 2016 was 43 species documented across all the surveyed markets, and was 62 species in 2017.
- The highest estimate of sold species was the Common Quail in 2016 (20,281 birds; 33%), and the Willow Warbler in 2017 (73,151 birds; 26%). Other significant species included European Turtle Dove, Red-backed Shrike, and Golden Oriole.
- Three threatened species (Pallid Harrier, Red-Footed Falcon, and Turtle Dove) were recorded in 2016's markets as threatened according to the IUCN Red List; their numbers were estimated to compose 3,659 individuals-6% of total birds found at the surveyed markets. The same three threatened species were documented in 2017's markets, estimated to compose 26,905 individuals-10% of total birds found at the surveyed markets.
- Out the 20 species specified in the Egyptian regulations, in 2016 permitted birds were estimated to be 30,423 individuals - 49% of total birds surveyed at markets, while non-permitted birds were estimated to be 31,454 individuals-51% of total birds surveyed at markets. In 2017 permitted birds were estimated to be 100,564 individuals - 36% of total birds surveyed at markets; while non-permitted birds were estimated to be 177,490 individuals - 64% of total birds surveyed at markets.
- Damietta market (block 5) in 2016 recorded the highest species diversity with 0.81 on the Simpson's Index in 2016, and in 2017 the highest species diversity was recorded at Alexandria Market (block 3) with 0.84 on the Simpson's Index.
- With respect to the economic value, the vast majority of birds increased in price between 2016 and 2017, largely influenced by inflation.

## 9.6 Hunting & Trapping at Protected Areas

- Hunting and trapping practices were documented in 4 out of the 8 surveyed plots (50%) within in 2016, and this decreased to 3 out of the 8 surveyed plots (37.5%) in 2017.
- Burullus protected area contained trapping practices at the 2 surveyed plots between 2016 and 2017, specifically coastal trammel nets and inland trammel nets.
- Ashtoum El Gamil protected area contained trapping practices at 1 out of the 2 surveyed plots in 2016. However, in 2017 no activities were recorded in the same plots, showing a decrease in activities.
- Ommayed protected area in both 2016 and 2017 had 1 out of the 2 surveyed plots at with records of trapping activities, specifically coastal trammel nets
- Salloum protected area during both years of the study had no records of hunting and trapping practices.





# 10

## Discussion & Recommendations

### 10.1 Discussion

#### *Context for the study*

One of the study's key aspects was to focus on coastal trammel nets, due to their visible scale along the entire coast and the lack of scientific studies conducted to assess the nets' potential impacts on migratory birds. Coastal trammel nets are permitted through licenses from local governments in accordance to the annual hunting regulations issued by the Ministry of Environment. This legal status increased the urgency to scientifically assess the true scale and dynamics of coastal trammel nets in Egypt, to better determine management and enforcement schemes. After conducting the most widespread (yet still limited) study on coastal trapping to date, between 2015-2017, many of our preliminary assumptions were put to question. The following sections will attempt to reflect on this.

#### *Scale & impact of coastal trammel nets*

After three years of visiting the coast, two of which included systematic surveying, it was clear that the majority of the coast (66% of the surveyed plots) included coastal trammel nets. The nets were exclusively located between 0-1000 m from the coastline, which was consistent with preliminary assumptions. The fact that coastal trammel nets were set up in the exact same areas in both 2016 and 2017 shows regularity and consistency in the practice. This is consistent with the legal process which recognizes the rights of specific members of local communities over specific lands along the coast. However, with regards to the scale of birds caught using coastal trammel nets, preliminary estimates (which ranged from 3 million to 12 million birds) were now in question.

During the first year of the study (2016), the estimate of total bird abundance was perceived as surprisingly low (below half a million). It must be noted that this number is extrapolated to represent 60 days during the autumn hunting season within a total length of 490 km of coastal trammel nets found at the surveyed belt transect at all the plots. According to hunters and trappers there were fewer birds during migration season of 2016, specifically Quail. Further investigation is necessary to establish a correlation between bird catch estimates and environmental factors that may vary from year to year.

The following year (2017) showed a relative increase in the estimate of total bird abundance caught in 490 km of coastal trammel nets. Continuous survey of coastal trammel nets is essential for an accurate assessment of coastal trammel nets since two years of data is not enough to properly determine patterns particularly in light of significant fluctuations in numbers between years. Further survey studies is recommended to account for bird catch using other hunting and trapping methods since catch from coastal trammel nets is not sufficient to depict the entire hunting and trapping effort along the Northern Egyptian Mediterranean coast.

### *Scale & impact of non-permitted trapping methods*

The main methodology included a survey of the coast to determine the occurrence of non-permitted trapping methods but did not include a systematic assessment of the numbers and species of birds caught at all the recorded methods. This was due to the predominant focus on coastal trammel nets based on the assumption that they were causing the most harm. However, data from 2016 and 2017 highlight the need to integrate detailed assessments on the numbers and species of birds caught using non-permitted trapping methods, most notably inland trammel nets and limesticks in Blocks 3-5 (i.e. east of Alexandria), and Haleeg Nets (i.e. tree nets) in the areas west of Alexandria.

The significance of non-permitted trapping methods, as opposed to coastal trammel nets, was previously underestimated due to their limited scale (in comparison with the coastal trammel nets). The conducted study, as well as pilot studies and numerous encounters with hunters and trappers, all highlighted the significance of non-permitted trapping methods, especially when accompanied with bird-calling devices. A pilot study conducted in the Lake Burullus area shed light on the magnified effectiveness of lime-sticks and inland trammel nets when used with a bird-calling device. This is further validated by local trappers' dependence on the devices; the results in this study showed that 100% of illegal trapping methods -excluding falcon trapping- included the use of a bird-calling device. In separate discussions with hunters, a common view was shared that less birds were being caught because "bird-calling devices located further south (inland) were attracting all the birds away from the coast." While this opinion has not been validated by any studies, it indicates the perceived importance of bird-calling devices held by trappers along the coast. Additionally, some trappers who annually set up coastal trammel nets with permits expressed their dissatisfaction with this type of trapping, as it seemed to be more expensive and less efficient than the non-permitted trapping methods conducted inland.

Systematic survey of illegal trapping practices, with updated methodologies to account for the numbers and species of birds caught, is essential to improve our understanding of the scale and dynamics of bird trapping along the coast.

### *Numbers & species of birds trapped in coastal trammel nets and markets*

The results from this report indicate the importance of both Quail and other species in coastal trammel nets and markets, regardless of their legality. This reflects the importance of other birds species than Quail, particularly songbirds, to the culinary preferences of Egyptians on the coast during Autumn. Discussions with individual trappers and consumers indicated a preference amongst locals for wild birds, as they are perceived to be better quality nutrition. Recent economic conditions, which have led to significant inflation between 2016 and 2017, should also be taken into consideration when discussing the demand for migratory birds as a source of both nutrition and/or income. While two years of survey have given us a baseline upon which to compare future results, surveying the numbers and species of birds caught in markets and across different trapping methods (permitted and non-permitted), is essential to better assess the impacts of coastal bird-trapping on migratory birds, and to understand the potential impacts of conservation actions on the socioeconomic drivers among local communities.

Furthermore, the methodology for market surveying requires an additional component to account for the numbers and species of birds that are immediately taken by traders and circulated throughout Egypt and the Middle East for consumption by non-locals. The export of migratory birds is believed to be reducing the supply of birds for local communities, at a profit for traders over trappers.

Finally, after conducting a separate pilot study of surveying coastal trammel nets for the numbers and species caught, it has become apparent that North Sinai (Block 6) is a significant area for bird trapping, and future surveying will provide a fuller assessment of the numbers and species of birds caught along the coast during autumn migration.

#### ***Conservation actions: questions of legality vs. local wellbeing***

After three consecutive years of visiting the coast, the issue of law enforcement has been put in question to reflect reality. While specific regulations do exist, as determined by the Ministry of Environment through its annual hunting decree, follow-up and enforcement remain problematic if we are to balance sustainable conservation actions with the wellbeing of local communities. While adopting a zero tolerance to illegal killing of birds, it is advised that enforcement activities be carefully considered when impacting underprivileged local communities on the Northern Mediterranean coast who may depend on migratory birds for nutrition. Additionally, education and awareness raising are needed alongside enforcement to set a platform for the endorsement of law enforcement by local communities to ensure sustainable conservation actions. This is only possible through the continuation of a two-way communication stream between NCE/EEAA and local communities, including educational/awareness components, alternative livelihood options, and concessions to be made by both conservationists and local communities. Some of the actions to be made by conservationists should include working effectively with local communities and the authorities to come up with solutions to address the unsustainable hunting practices. Enforcement of regulations addressing non-permitted trapping methods along with bird-calling devices need to be in place.

## 10.2 Recommendations

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- Coastal trammel nets as well as inland trammel nets should be further assessed, to improve the collected data sets.
- A database should be set up by the relevant authorities including all of the permits issued for coastal trammel nets, to allow for a better assessment of legality and compliance of permitted trapping methods, and to pilot potential enforcement actions to follow-up with compliance.
- Non-permitted trapping methods, specifically inland trammel nets, lime-sticks, and Haleeg nets should be monitored separately for the numbers and species of birds caught, as well as for their occurrence along the coast.
- Market survey should be continued, with enhancements to the methodology to ensure a clearer depiction of market dynamics. This can include surveying bird-trade between points of capture and points of selling.
- North Sinai should be integrated into surveying and conservation plans, with necessary resources allocated to this area for when it becomes possible to conduct survey and awareness activities.
- The trade of birds outside of markets, for consumption throughout Egypt (away from the coast) and the Arabian Gulf (through export), should be assessed systematically to better understand the dynamics of trading migratory birds.
- Conservation actions should primarily revolve around a two-way communication stream between local communities and conservationists (government & NGOs), to ensure that enforcement actions are greeted with less hostility from local communities.
- Enforcement actions better focus bird-calling devices as well as spring hunting/trapping activities, since both activities are deemed illegal by law and considered “unethical” by local customs and traditions. This increases chances of stewardship by local communities for conservation.
- A pragmatic approach to regulation and enforcement should be discussed between local communities and conservationists from the EEAA and NCE, to better align reality with the legal frameworks that govern hunting and trapping practices in Egypt. This pragmatic approach should consider the wellbeing of underprivileged local communities, while maintaining a zero tolerance approach towards illegal trapping practices as well as preventing the illegal trade and export of migratory birds to neighboring countries.





# Annex 01

## ESTIMATES OF BIRDS CAUGHT IN 490 KM OF COASTAL TRAMMEL NETS AT ZONE A OF BLOCKS 2 TO 5 DURING THE AUTUMN HUNTING SEASON OF 2016 AND 2017

■ Permitted Species  
 ■ Threatened Species (IUCN Red List)

SCIENTIFIC NAME	COMMON NAME	2 0 1 6		2 0 1 7	
		ESTIMATE CATCH / DAY	ESTIMATE CATCH / 60 DAYS	ESTIMATE CATCH / DAY	ESTIMATE CATCH / 60 DAYS
<i>Alaudala rufescens</i>	Lesser Short Toed lark	27	1610	34	2037
<i>Alcedo atthis</i>	Common kingfisher	37	2204	18	1089
<i>Anthus campestris</i>	Tawny pipit	0	0	2	141
<i>Asio flammeus</i>	Short Eared Owl	0	0	2	141
<i>Bubulcus ibis</i>	Cattle egret	24	1469	3	202
<i>Burhinus oedicnemus</i>	Eurasian Thick-Knee	0	0	4	215
<i>Burhinus senegalensis</i>	Senegal Thick-knee	4	245	0	0
<i>Caprimulgus europaeus</i>	European Nightjar	131	7845	123	7361
<i>Coracias garrulus</i>	European Roller	0	0	7	403
<i>Coturnix coturnix</i>	Common Quail	2475	148524	6973	418408
<i>Crex crex</i>	Corncrake	5	282	27	1641
<i>Cyanecula svecica</i>	Bluethroat	0	0	151	9075
<i>Falco columbarius</i>	Merlin	0	0	5	282
<i>Falco tinnunculus</i>	Common Kestrel	0	0	6	356
<i>Halcyon smyrnensis</i>	White Breasted Kingfisher	4	245	3	202
<i>Hirundo rustica</i>	Barn swallow	0	0	10	605
<i>Hydrobates pelagicus</i>	European storm petrel	0	0	3	202
<i>Jynx torquilla</i>	Eurasian Wrynek	0	0	3	202
<i>Lanius collurio</i>	Red Backed Shrike	151	9061	229	13714
<i>Lanius excubitor</i>	Great Grey Shrike	0	0	23	1351
<i>Lanius senator</i>	Woodchat shrike	0	0	7	403
<i>Luscinia luscinia</i>	Thrush Nightingale	24	1469	43	2561
<i>Motacilla alba</i>	White Wagtail	5	282	2	141
<i>Muscicapa striata</i>	Spotted Flycatcher	0	0	44	2622
<i>Oenanthe hispanica</i>	Black Eared Whetaer	2	141	0	0
<i>Oenanthe isabellina</i>	Isabelline Wheatear	4	245	0	0
<i>Oenanthe oenanthe</i>	Northern Wheatear	0	0	1244	74640
<i>Oenanthe sp.</i>	Wheatear sp.	1068	64067	0	0
<i>Passer domesticus</i>	House sparrow	16	980	0	0
<i>Passer hispaniolensis</i>	Spanish sparrow	139	8326	34	2017
<i>Pernis apivorus</i>	European Honey Buzzard	2	141	0	0
<i>Phoenicurus phoenicurus</i>	Common Redstart	110	6612	75	4484
<i>Phylloscopus collybita</i>	Common Chifchaff	0	0	7	424
<i>Phylloscopus sibilatrix</i>	Wood Warbler	2	141	0	0
<i>Phylloscopus trochilus</i>	Willow Warbler	42	2541	211	12665
<i>Porzana porzana</i>	Spotted crane	2	141	0	0
<i>Rallus aquaticus</i>	Western Water Rail	0	0	7	403
<i>Saxicola rubetra</i>	Whinchat	0	0	37	2218
<i>Spilopelia senegalensis</i>	Laughing Dove	8	490	7	403
* <i>Streptopelia turtur</i> (VU)	European Turtle Dove	5	282	69	4168
<i>Sylvia atricapilla</i>	Eurasian Blackcap	0	0	10	605
<i>Sylvia curruca</i>	Lesser Whitethroat	0	0	9	544
<i>Tyto alba</i>	Common Barn Owl	4	245	0	0
<i>Upupa epops</i>	Common Hoopoe	72	4313	119	7139
<b>TOTAL ESTIMATES</b>		<b>4,365</b>	<b>261,901</b>	<b>9,551</b>	<b>573,064</b>

\*Estimates represent an area of 5.1 km<sup>2</sup> (0.79%) out of an area of 640 km<sup>2</sup> of the Northern Mediterranean Coast of Egypt

## Annex 02 ESTIMATES OF SOLD BIRDS AT 5 MARKETS MARS MATROUH, DABAA, ROSETTA, DAMIETTA, AND PORT SAID CORRESPONDING TO BLOCKS 2,3,4, AND 5 RESPECTIVELY DURING THE AUTUMN HUNTING SEASON OF 2016 AND 2017

SCIENTIFIC NAME	COMMON NAME	2 0 1 6		2 0 1 7	
		ESTIMATE SOLD / DAY	ESTIMATE SOLD / 60 DAYS	ESTIMATE SOLD / DAY	ESTIMATE SOLD / 60 DAYS
<i>Accipiter brevipes</i>	Levant Sparrowhawk	0	4	0	0
<i>Accipiter nisus</i>	Eurasian Sparrowhawk	0	0	1	35
<i>Ammoperdix heyi</i>	Sand Partridge	4	226	0	0
<i>Anas acuta</i>	Northern Pintail	17	1024	40	2407
<i>Anas clypeata</i>	Northern Shoveler	0	0	53	3184
<i>Anas crecca</i>	Common Teal	3	184	8	484
<i>Asio flammeus</i>	Short Eared Owl	0	0	0	4
<i>Asio otus</i>	Northern Long-Eared Owl	0	7	0	0
<i>Athene noctua</i>	Little Owl	0	7	0	0
<i>Burhinus senegalensis</i>	Senegal Thick-knee	0	4	0	0
<i>Buteo buteo</i>	Eurasian Buzzard	0	7	0	14
<i>Buteo rufinus</i>	Long Legged Buzzard	0	18	1	39
<i>Calandrella brachydactyla</i>	Greater Short toed lark	0	0	34	2019
<i>Calidris pugnax</i>	Ruff	6	335	0	0
<i>Caprimulgus europaeus</i>	European Nightjar	0	0	5	289
<i>Charadrius alexandrinus</i>	Kentish plover	0	0	1	88
<i>Chlidonias leucopterus</i>	White Winged Tern	0	0	0	11
<i>Circaetus gallicus</i>	Short Toed Snake Eagle	0	0	1	71
<i>Circus aeruginosus</i>	Western Marsh Harrier	0	0	0	11
* <i>Circus macrourus</i> (NT)	Pallid Harrier	0	4	0	4
<i>Coracias garrulus</i>	European Roller	0	0	1	46
<i>Corvus corax</i>	Common Raven	0	4	0	0
<i>Coturnix coturnix</i>	Common Quail	338	20281	948	56866
<i>Crex crex</i>	Corncrake	2	120	61	3678
<i>Cuculus canorus</i>	Common Cuckoo	0	0	0	11
<i>Cyanecula svecica</i>	Bluethroat	0	0	3	176
<i>Elanus axillaris</i>	Black Sholder Kite	0	0	0	11
<i>Elanus caeruleus</i>	Black-winged Kite	0	4	0	0
<i>Euodice malabarica</i>	Indian silver bill	0	0	0	18
<i>Eurasian reed warbler</i>	Common Reed Warbler	0	0	0	4
<i>Falco biarmicus</i>	Lanner Falcon	1	71	4	251
<i>Falco columbarius</i>	Merlin	0	0	0	4
<i>Falco eleonora</i>	Eleonora's Falcon	0	4	0	7
<i>Falco pelegrinoides</i>	Barbary Falcon	0	18	1	64
<i>Falco peregrinus</i>	Peregrine falcon	0	0	0	18
<i>Falco tinnunculus</i>	Common Kestrel	10	576	59	3519
* <i>Falco vespertinus</i> (NT)	Red Footed Falcon	2	92	1	56
<i>Fulica atra</i>	Common Coot	26	1581	51	3046
<i>Gallinula chloropus</i>	Common Moorhen	15	904	45	2696
<i>Halcyon smyrnensis</i>	White breasted Kingfisher	0	0	0	11
<i>Hieraaetus pennatus</i>	Booted Eagle	0	0	0	7
<i>Ixobrychus minutus</i>	Common Little Bitern	0	0	1	42
<i>Jynx torquilla</i>	Eurasian Wrynek	0	0	6	356
<i>Lanius collurio</i>	Red Backed Shrike	54	3213	673	40373
<i>Lanius minor</i>	Lesser Grey Shrike	0	4	4	233

SCIENTIFIC NAME	COMMON NAME	2 0 1 6		2 0 1 7	
		ESTIMATE SOLD / DAY	ESTIMATE SOLD / 60 DAYS	ESTIMATE SOLD / DAY	ESTIMATE SOLD / 60 DAYS
<i>Lanius nubicus</i>	Masked Shrike	0	0	0	11
<i>Luscinia luscinia</i>	Thrush Nightingale	152	9096	221	13246
<i>Milvus migrans</i>	Black Kite	0	0	0	4
<i>Monticola solitarius</i>	Blue Rock-thrush	0	4	0	0
<i>Muscicapa striata</i>	Spotted Flycatcher	0	0	47	2799
<i>Oena capensis</i>	Namaqua Dove	0	4	0	0
<i>Oenanthe deserti</i>	Desert wheatear	0	0	5	311
<i>Oenanthe hispanica</i>	Black eared whetaer	0	0	4	268
<i>Oenanthe oenanthe</i>	Northern Wheatear	0	0	55	3318
<i>Oenanthe sp.</i>	Wheatear Sp.	15	914	47	2820
<i>Oriolus oriolus</i>	Eurasian Golden Oriole	28	1707	255	15311
<i>Pandion haliaetus</i>	Osprey	0	4	0	0
<i>Passer domesticus</i>	House Sparrow	1	71	0	0
<i>Pernis apivorus</i>	European Honey-buzzard	0	7	0	7
<i>Phoenicurus phoenicurus</i>	Common Redstart	3	185	67	3999
<i>Phylloscopus collybita</i>	Common Chifchaff	0	0	11	688
<i>Phylloscopus trochilus</i>	Willow Warbler	209	12561	1219	73151
<i>Porphyrio porphyrio</i>	Purple Swamphen	2	102	3	162
<i>Porzana porzana</i>	Spotted crane	0	0	1	42
<i>Pterocles senegallus</i>	Spotted Sandgrouse	0	7	0	0
<i>Rallus aquaticus</i>	Western Water Rail	0	0	17	992
<i>Saxicola rubetra</i>	Whinchat	0	0	0	11
<i>Spatula clypeata</i>	Northern Shoveler	12	695	0	0
<i>Spatula querquedula</i>	Garganey	23	1401	132	7945
<i>Spilopelia senegalensis</i>	Laughing Dove	47	2816	84	5026
<i>Streptopelia decaocto</i>	Eurasian Collared dove	0	0	0	11
<i>Streptopelia roseogrisea</i>	African Collared-dove	1	42	0	0
<i>Streptopelia turtur (VU)</i>	European Turtle-dove	59	3563	447	26845
<i>Tringa nebularia</i>	Common Greenshank	0	4	0	0
<i>Turdus philomelos</i>	Song Thrush	0	0	0	7
<i>Tyto alba</i>	Common Barn Owl	0	7	0	0
<i>Upupa epops</i>	Hoopoe	0	0	6	371
<i>Unidentified Ardeidae</i>	Night Heron	0	0	1	71
<i>Unidentified Passeri</i>	Song Birds	0	0	8	494
TOTAL ESTIMATES		1,031.28	61,877	4,634	278,054



## Annex 03 PRICES (EGP) OF BIRDS SOLD AT 5 MARKETS MARSA MATROUH, DABAA, ROSETTA, DAMIETTA, AND PORT SAID CORRESPONDING TO BLOCKS 2,3,4, AND 5 RESPECTIVELY DURING THE AUTUMN HUNTING SEASON OF 2016 AND 2017

SCIENTIFIC NAME	COMMON NAME	2016	2017
<i>Accipiter brevipes</i>	Levant sparrowhawk	150	X
<i>Alaudala rufescens</i>	Lesser short-toed lark	X	3
<i>Anas acuta</i>	Northern Pintail	65	80
<i>Anas crecca</i>	Common Teal	32.5	40
<i>Asio flammeus</i>	Short Eared Owl	X	80
<i>Asio otus</i>	Northern Long-Eared Owl	150	X
<i>Athene noctua</i>	Little Owl	55	X
<i>Burhinus senegalensis</i>	Senegal Thick-Knee	35	X
<i>Buteo buteo</i>	Eurasian Buzzard	X	55
<i>Buteo rufinus</i>	Long Legged Buzzard	75	300
<i>Caprimulgus europaeus</i>	European Nightjar	x	17.5
<i>Circaetus gallicus</i>	Short Toed Snake Eagle	x	250
<i>Circus aeruginosus</i>	Western Marsh Harrier	X	100
<b>*Circus macrourus (NT)</b>	<b>Pallid Harrier</b>	<b>100</b>	<b>250</b>
<i>Coturnix coturnix</i>	Common Quail	20	22.5
<i>Crex crex</i>	Corncrake	6	12.5
<i>Cyanecula svecica</i>	Bluethroat	X	1.5
<i>Falco biarmicus</i>	Lanner Falcon	175	1900
<i>Falco eleonora</i>	Eleonora's falcon	100	150
<i>Falco pelegrinoides</i>	Barbary falcon	X	350
<i>Falco peregrinus</i>	Peregrine falcon	X	8000
<i>Falco tinnunculus</i>	Common Kestrel	100	400
<b>*Falco vespertinus (NT)</b>	<b>Red Footed Falcon</b>	<b>100</b>	<b>125</b>
<i>Fulica atra</i>	Common Coot	35	21.5
<i>Gallinula chloropus</i>	Common Moorhen	12.5	22.5
<i>Hieraaetus pennatus</i>	Booted Eagle	X	150
<i>Jynx torquilla</i>	Eurasian Wryneck	x	2
<i>Lanius collurio</i>	Red Backed Shrike	3.25	4
<i>Lanius minor</i>	Lesser Grey Shrike	5	X
<i>luscinia luscinia</i>	Thrush Nightingale	1.5	4
<i>Milvus migrans</i>	Black Kite	X	100
<i>Muscicapa striata</i>	Spotted Flycatcher	X	1.25
<i>Oenanthe deserti</i>	Desert Wheatear	X	1.3
<i>Oenanthe hispanica</i>	Black Eared whetaer	X	1.3
<i>Oenanthe oenanthe</i>	Northern Wheatear	X	1.3
<i>Oriolus oriolus</i>	Eurasian Golden Oriole	13	16.5
<i>Pernis apivorus</i>	European honey buzzard	100	150
<i>Phoenicurus phoenicurus</i>	Common Redstart	1.5	2.5
<i>Phylloscopus collybita</i>	Common Chiffchaff	X	0.8
<i>Phylloscopus trochilus</i>	Willow warbler	1	1.25
<i>Porphyrio porphyrio</i>	Purple Swamphen	27.5	35
<i>Porzana porzana</i>	Spotted Crake	X	12.5
<i>Rallus aquaticus</i>	Western Water Rail	6	12.5
<i>Saxicola rubetra</i>	Whinchat	X	1.25
<i>Spatula clypeata</i>	Northern Shoveler	60	70

SCIENTIFIC NAME	COMMON NAME	2016	2017
<i>Spatula querquedula</i>	Garganey	32.5	40
<i>Spilopelia senegalensis</i>	Laughing Dove	12	15
<i>Streptopelia roseogrisea</i>	African Collared Dove	20	27.5
<i>Streptopelia turtur (VU)</i>	European Turtle-dove	40	47.5
<i>Sylvia atricapilla</i>	Blackcap	X	1.5
<i>Sylvia curruca</i>	Lesser Whitethroat	X	1.5
<i>Tyto alba</i>	Common Barn Owl	100	X
<i>Upupa epops</i>	Common Hoopoe	x	3

Nature Conservation Egypt (NCE) is an Egyptian NGO working towards conserving Egypt's natural heritage and the promotion of its sustainable use, for the benefit of of present and future generations.

Established in 2005 by a number of Egypt's leading experts in the field of nature and biodiversity conservation, NCE is specialised scientific research, advocacy, education and outreach to support species, their habitats, and local communities. NCE works in partnership with local experts and governmental bodies, as well as international organisations and partnerships to ensure efficient collaboration for conservation within and across borders.

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