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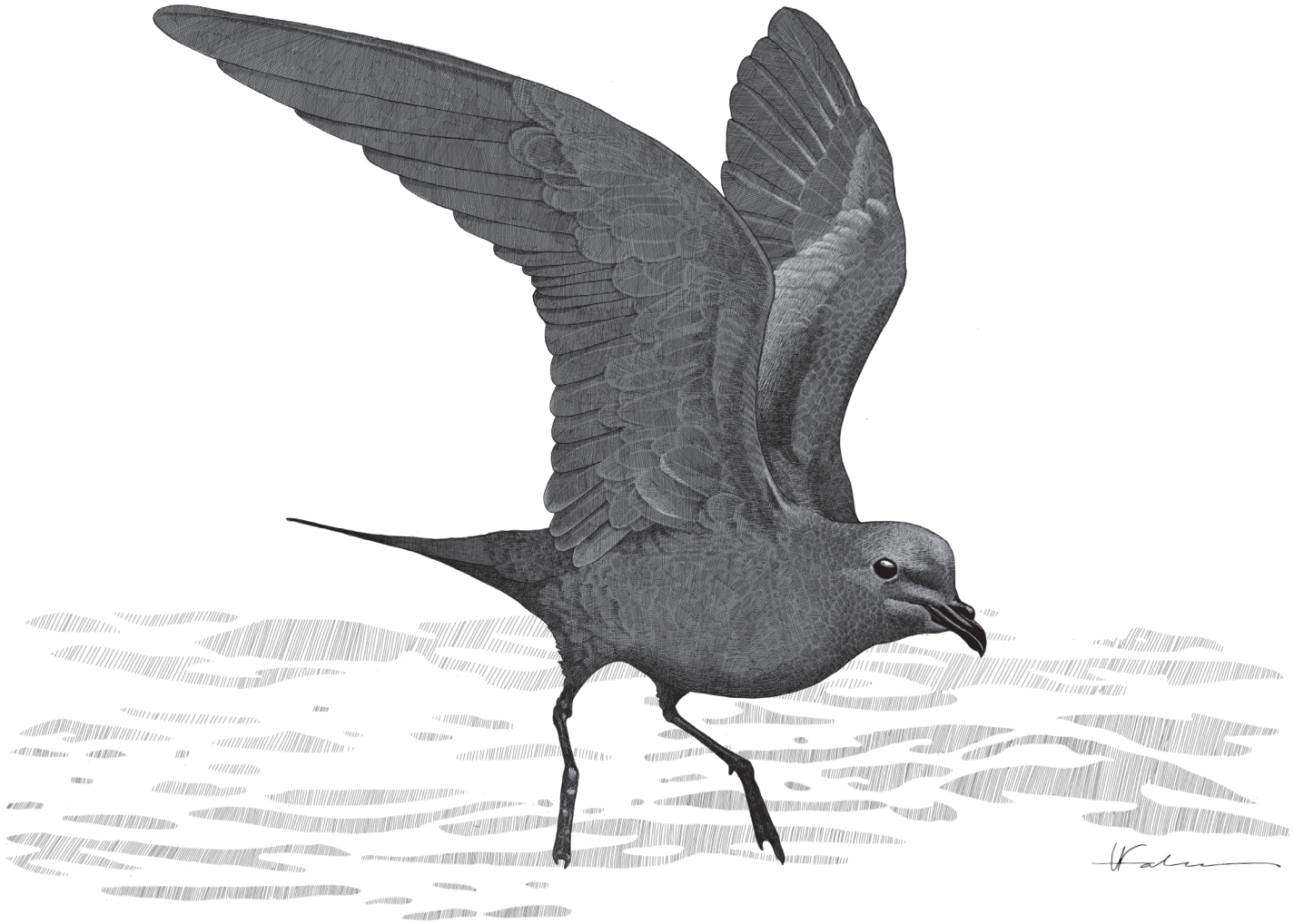

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Il-Merill is the ornithological journal of BirdLife Malta. It serves as a medium for the publication of articles and short notes dealing with aspects of ornithology that have a bearing on the Maltese Islands and the Mediterranean. It also carries systematic lists of birds recorded in the Maltese Islands as well as bird ringing reports.

Il-Merill has been in publication since 1970.

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Phenology and funnelling of diurnal duck migration in the Maltese Islands in spring

Charles Coleiro

Abstract

Diurnal duck migration over the Maltese Islands is mainly restricted to the coasts with only exceptional inland occurrences. Offshore observations of duck movements are predominantly visible from headlands, with birds flying at various distances from land, often influenced by local meteorological conditions. The largest numbers are recorded in spring, the main area being the Malta-Gozo Channel. The birds either fly through or rest on the sea surface in the Channel itself or a few kilometres offshore in the areas leading to the Channel. Data collected through regular counts made from 1987 to 2013 have helped provide an insight into the density of passage ducks over the spring migration season in correlation to meteorological conditions and, most importantly, to the lunar cycle.

Introduction

Prior to 1987, collection of data on duck migration in spring in the Malta-Gozo Channel was largely sporadic. Although large passages of the commoner species was known to occur on a few days in most years (Sultana & Gauci, 1982) there had been no documented systematic studies. Falzon (1995) investigated the diurnal duck migration in the Channel in relation to a possible leading line effect.

The main species recorded in the Maltese Islands during the pre-nuptial migration are

Northern Pintail *Anas acuta*
Garganey *Spatula querquedula*
Northern Shoveler *Spatula clypeata*
Ferruginous Duck *Aythya nyroca*.

The Northern Pintail is widespread across the northern hemisphere (Madge and Burn, 1988). In Europe the main breeding areas are the Nordic countries, with wintering grounds in NW Europe. Birds from the large Russian breeding population mainly pass eastern and central Europe, where some winter while others move to West Africa for the winter (European Communities, 1987). The highest count of the wintering population in West Africa was 838,000 in 1987 (del Hoyo et al., 1992).

The Garganey breeds over most of the temperate Palearctic region and winters in tropical Africa and Asia (Madge and Burn, 1988). In Africa, the winter population concentrates especially in the Niger Basin; 2,000,000 individuals were counted/estimated wintering throughout sub-Saharan West Africa in the mid-1980s; 77,310 were counted in Senegal in a partial census in winter 1991 (del Hoyo et al., 1992).

The Northern Shoveler is widespread across the entire northern hemisphere, wintering in temperate lowlands and northern tropics (Madge and Burn, 1988). In Africa, 19,170 wintered in Senegal in 1991 (del Hoyo et al., 1992).

The Ferruginous Duck is distributed through the Palearctic, with a fragmented breeding distribution extending east from western Europe to western China and western Mongolia (Robinson and Hughes, 2003). The wintering population in the Western Palearctic was estimated at 50,000 in the mid-1980s, mostly in the Central Mediterranean area. Wintering censuses in tropical Africa yielded a maximum of 6,450, with estimated 7,000–10,000 individuals in West Africa (del Hoyo et al., 1992). According to Troillet and Girard (2001), however, 17,000 have been recorded in West and Central Africa.

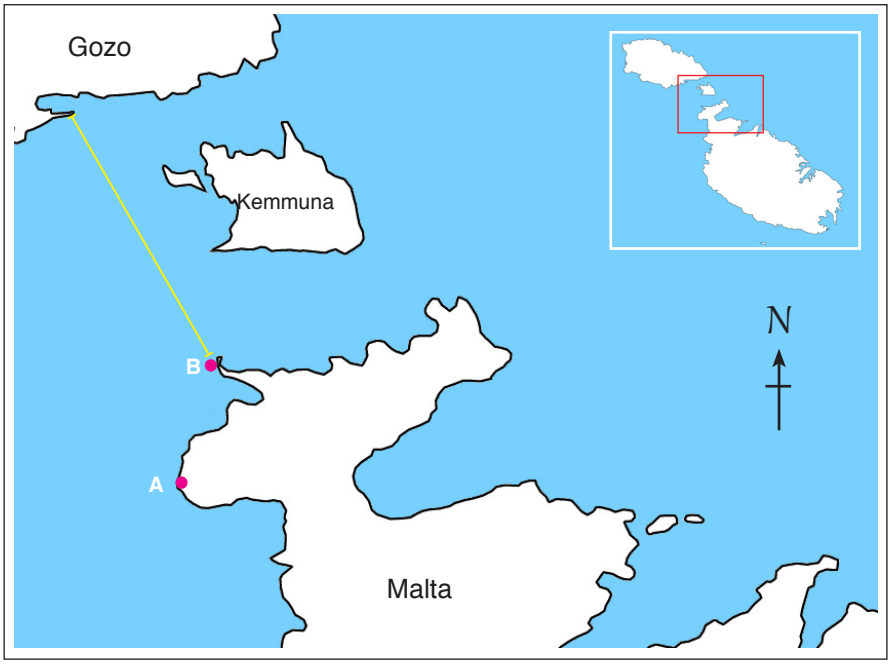

Fig. 1. Map showing the two observation posts A (Qammieħ) and B (Ċirkewwa) and the shortest distance of the channel, i.e. 4.5 km

Years	1987–1993	1994–2000	2001–2013	total
number of days	134	167	383	**684**
number of hours	584	716	1748	**3048**
number of visits am	134	165	255	**554**
number of visits pm	12	14	182	**208**

Table 1. Observation counts for the period 1987 to 2013

Methods

Systematic observations make the recording of diurnal and seasonal migration patterns of different species possible, and in addition provide an insight into the phenology and density of passage migrants at certain days or over the migration season (Berthold, 1993). Direct visual observations and counts were the method used for this study of migrating ducks. This involved counting migrating ducks as they moved past established lookout/headland from 1987 to 2013. Spotting was made with binoculars 12x40 and subsequent identification involved spotting scope 15x60. Number of scans were approximately once every five minutes so as to allow proper identification of any ducks spotted in the previous scan. The observation posts were located at the headlands of Qammieħ (35.971N,14.320E) and Ċirkewwa (35.989N,14.328E), both sites overlooking the Malta-Gozo Channel. The two sites are situated in the northwest tip of Malta beneath Marfa Ridge and are separated from each other by ca 1km of coastline. From 1987 to 2000 the Qammieħ observation post was used, while Ċirkewwa was used from 2001 to 2013. The Malta-Gozo Channel is 4.5km wide at its narrowest (Fig. 1).

Observation counts were conducted from mid-late February to early April. From 1987 to 1993 counts were mostly sporadic but often indicative of the pattern of duck migration through the Channel (Table 1). Adequate data were, however, restricted due to direct human interference in the Channel where migrating and settling ducks were often disturbed by regular chasing from seacraft and even shot at. Disturbance and lack of systematic monitoring increased the probability of missed peak migrations in some years. Data of duck numbers and behaviour in those years were therefore not sufficient for proper analysis, but have still been included in this study.

Direct human interference decreased gradually from 1994 to 2000, which led to significant increase in visits and observation hours during duck migration periods, resulting in more accurate results and improved data. From 2000 to 2013 interference from shooting on migrating ducks became almost totally absent, so observations became more pronounced and systematic, covering almost the entire migration period, often with daily counts from sunrise to sunset especially on days with a movement of passage ducks (Table 1).

Various variables were noted, including meteorological conditions and, most importantly, the lunar phase. Data collected also included species, flock number and size, behaviour, timing, raft positions in the Channel, and number of resting flocks.

Results

SEASONAL PHENOLOGY

The first observation of ducks in spring in the Malta-Gozo Channel was usually in the second and third weeks of February, with variation in the dates in some years. Not uncommonly, though, the highest numbers in February were observed in the fourth week (Table 2). On the other hand, in some years ducks were almost totally absent in February. The heaviest passages in March occurred in any week, with all four main species commonly seen at this time of year migrating through. In general, migration ceased by the end of March but some influxes occasionally took place in April, mainly in the first week.

The first species to arrive were usually Northern Pintail, with peak numbers on any day from the fourth week of February to the third week of March. It was one of the two commonest ducks observed in spring, with a total of 28,094 in the period 1994–2013.

Garganey, which was observed from the first week of March to the first week of April, was the commonest species logged in spring, with a total of 71,515 in the period 1994–2013. The highest numbers of Garganey were usually observed in the third and fourth week of March.

The other two regular species were Northern Shoveler and Ferruginous Duck. Northern Shoveler numbers fluctuated from year to year, but were always less than the two main

February	February	March	March	April
LQ – NM – FQ	**FQ – FM – LQ**	**LQ – NM – FQ**	**FQ – FM – LQ**	**LQ – NM – FQ**
112	**17,776**	**8,137**	**81,668**	**2,683**

Table 2. Duck totals during the 15-day period of each moon phase occurring from Feb to Apr of each year from 1987 to 2013 (LQ = last quarter, NM = new moon, FQ = first quarter, FM = full moon)

Northern Pintail	Garganey	Ferruginous Duck	Northern Shoveler	Eurasian Wigeon	Red-breasted Merganser	Common Pochard	Common Teal	Common Shelduck	Unid. duck
28,094	71,515	4,389	2081	135	4	17	4	341	4,515

Table 3. Totals for all duck species observed in the period 1987–2013

species. Its migration dates were very similar to those of the Northern Pintail.

Ferruginous Duck was usually seen in March in smaller numbers than the two main species, but high numbers have been recorded in some years, e.g. 2006 with 997 counted.

Other duck species included Common Shelduck *Tadorna tadorna*, seen almost annually in small flocks in March; Eurasian Wigeon *Mareca penelope*, which was less commonly seen; Common Teal *Anas crecca*, Common Pochard *Aythya ferina* and Red-breasted Merganser *Mergus serrator,* which were rarely observed (Table 3).

DIURNAL PHENOLOGY

On most days the first flocks of duck arrived in the morning, usually just after sunrise or even later. Only a small number were observed at dawn. These early flocks often tended to continue migrating without stopping, flying through and out of the Channel due east. On peak days the flow of ducks was generally constant throughout the morning but on such days an increase in both flock sizes and number of flocks seemed to take place ca 2–3 hours after sunrise. Usually this increase in flow lasted about an hour, after which numbers decreased back to a constant but steady flow. Except for those days with heavy passages, number of flocks arriving in the Channel normally dropped after mid-late morning. Those flocks that did not immediately continue their migration roamed around the Channel for some time, after which they settled, often resting for a few hours (Fig. 2).

During mid-day and early afternoon, number of migratory flocks were often very low or totally absent. Occasionally a few flocks are observed, often including resting birds present from earlier in the day. On the other hand, on peak days an increase in migration flow was often evident around mid-day, normally lasting for 1–2 hours. This increase tended to coincide with certain meteorological conditions, especially strong westerly winds. This peak was generally followed by a lesser but still constant movement of flocks.

Migration tended to decrease completely by late afternoon, though another peak in migration flow was often noticed to occur approximately 1–2 hours before sunset. Besides the movement of any resting ducks still present in the Channel, an increase in flock numbers was in evidence during mid-afternoon. Most of these flocks would still be a few kilometres offshore. These were often observed roaming at the mouth of the Channel (Fig. 2), eventually flying directly into the Channel later on. In most cases these flew straight through, crossing the Channel in a single flight. These ducks also seem to influence the flocks still roaming in the Channel, influencing their decision–taking of crossing the Channel. On most days the Channel was completely deserted of ducks by sunset.

DIRECTION OF MIGRATION

Almost all flocks were seen arriving predominantly from a westerly-southwesterly direction before entering the Channel, flying in an easterly-northeasterly direction once they left the Channel on the east side (Fig. 2). Most flocks arriving from the west-southwest seemed to follow the west coast, flying in a northwesterly direction towards Gozo. Before steering towards the Channel and when still a few kilometres offshore, the majority of birds tended to spend a certain amount of time (varying from a few minutes to 1–2 hours) wandering at the mouth of the Channel, often flying close to the water surface. Occasionally they would head into the Channel veering towards the island of Kemmuna only to revert back for several kilometres often out of the Channel. Throughout this time various flocks will have gathered, and eventually most combine into larger flocks, regardless of species. During this time birds began to

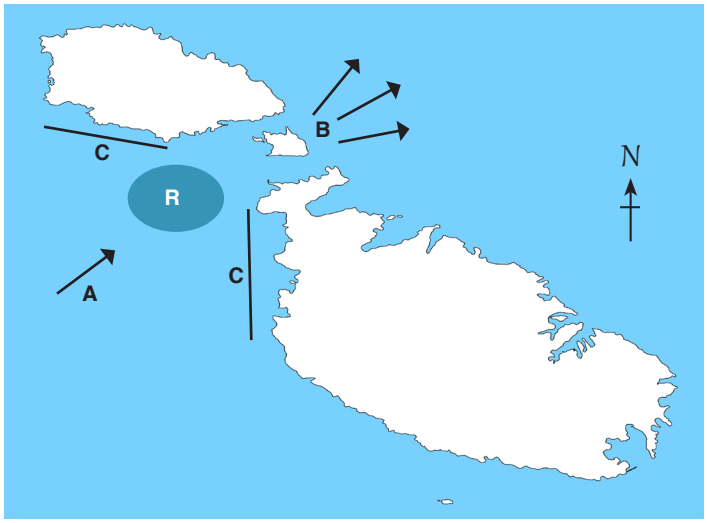

Fig. 2. Map of the Maltese Islands showing (A) directional flow of migrating ducks, (B) directions of ducks after leaving the Channel, (R), the main resting/roaming/rafting zone, and (C) area of cliffs

gain height and encroach the Channel, only to descend back to lower heights. Flight was often interspersed with frequent alighting, on occasions for not more than a few minutes.

BEHAVIOUR IN THE CHANNEL

While some flocks eventually resumes their migration by crossing the Channel, others lingered for several hours, usually 2–4 hours before sunset. These often formed large rafts just off the mouth of the Channel. Very rarely, rafts formed close to land, most staying roughly halfway between Malta and Gozo. Position of rafts was often related to wind conditions. In strong winds and heavy swell they settled in the calmer zones of the Channel; in westerly to northerly winds ducks tended to settle much closer to the shore of Gozo, in calmer sea created by the high cliffs. On the other hand, on days with negligible winds ducks settled in the halfway zone. It is very probable that several other flocks, often not visible from the observation posts, alighted much further away, often settling several kilometres offshore. These flocks were mostly observed roaming mainly in early afternoon without coming close to the mouth of the Channel. In most cases these flocks were hardly visible and often impossible to identify. In all likelihood, flocks eventually observed later in the afternoon included some, if not all, of these flocks after they had decided to continue their migration.

It was observed that restless behaviour – in the form of continuous flying and settling – often preceded departure. This was most evident in the afternoon, where such behaviour became more pronounced than during the mornings. It also involved heavier flocks due to the various rafts formed during the rest of the day. This was due to the fact that flocks approaching the Channel were often joined by any flocks resting in their flight path, mostly smaller flocks attracted to larger ones. These birds eventually gained height and continually approached the narrower channels further in. At this point of the Channel the open sea on the east side of the Islands becomes more conspicuous, and this seemed to urge the birds to cross the narrower channels and out to open sea.

Except for Ferruginous Duck all the other duck species were highly gregarious, commonly mixing in the Channel especially prior to departure. Ferruginous Ducks tended to keep together and very rarely mixed with the other ducks, and when they did, it was either just prior to departure or when in small numbers.

EFFECT OF LUNAR PHASE

The lunar phase appears to have a significant effect on the amount of ducks observed on migration. In all the years of observation, most flocks have been recorded in the 15 days between first quarter and last quarter of the lunar cycle (Fig. 3), in most years peaking on any of the 6 days before and 2–3 days after full moon. Flocks were scarcely observed in the remaining lunar phases, often with a complete lack of birds, especially in the 6 days prior to a new moon (Table 4).

Lunar phase	total count
First Quarter (waxing gibbous) to **Full Moon**	65,970
Full Moon (waning gibbous) to **Last Quarter**	33,296
Last Quarter (waning crescent) to **New Moon**	2,333
New Moon (waxing crescent) to **First Quarter**	9,030

Table 4. Total number of ducks counted in each quarter of the moon phase for the period 1987–2013

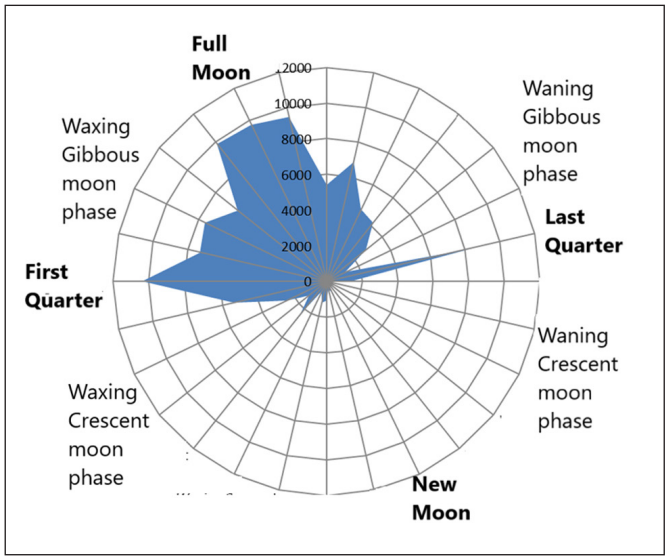

Fig. 3. Number of migrating ducks in relation to lunar phase

Two main migration periods were noted to occur, the first in February and the second in March (Table 2), and both also directly related to the lunar phase. In some years a third but minor migration took place in the first half of April, involving almost exclusively Garganey. All three migration periods seemed to be directly related to the date of the full moon. It also resulted that in those years when full moon fell in the first half of February – as in 2001, 2006, 2009 and 2012 – number of ducks was generally low and involved mostly Northern Pintail and Northern Shoveler, with occasional Common Teal and Eurasian Wigeon. Passage of ducks was much heavier during the next full moon when it fell in the first half of March. During this period larger numbers of Northern Pintail were observed along with an increasing number of Garganeys and – often in good numbers – Northern Shoveler and Ferruginous Duck. In such years when the full moon occurred in the first half of the month a third phase of migration occasionally took place in April, as happened in 2001 and 2012.

On the other hand, when the full moon fell in the second half of February migration was notably heavier than when it fell

in the first half of the month, and mainly involved Northern Pintail. But this time the first flocks of Ferruginous Duck and Garganey were also observed. Subsequently during the following full moon phase, which fell in the second half of March, the heavier numbers mostly involved Garganey, but also Ferruginous Duck and Northern Shoveler. In some years, Northern Pintail was often still migrating through, occasionally in good numbers.

It also resulted that in February the flow of migration tended to be generally heavier during a waning gibbous moon. On the contrary in March migration tended to be heavier in the days leading to the full moon, i.e. in the waxing gibbous period. Thus in certain years migration was completely absent in the 1–2 days following the full moon of March, especially if this occurred at the end of the month.

Another important factor noted each year was that between the two or three migration periods – and especially before and after each migration period – there was often a total dearth of duck presence or migration in the Channel. The gradual decrease in numbers after each main migration period generally indicated that migration would cease for a number of days. This always seemed to coincide with those days in the waning and waxing crescent period of the moon. Thus there seems to be an established pattern in duck migration which is evidently similar every year.

EFFECT OF METEOROLOGICAL CONDITIONS

Wind direction and strength also seem to have a significant effect on the migration flow and the duck's behaviour. Westerly and northwesterly winds are the predominant wind in the Maltese Islands, blowing on 19% of the windy days (Schembri, 1997) and were also one of the main winds encountered in February and March during the systematic observations. Most ducks observed in the Channel mostly coincided with these west to northwesterly winds (Table 5) and in effect the favourable condition for most of the peak duck migration days was the combined effect of near to full moon and westerly winds. Strong easterly winds, on the other hand, resulted in very few flocks observed, but good numbers have sometimes been observed in light to moderate southeasterly or northeasterly winds.

Light or variable winds seemed to have a negative effect on the amount of ducks travelling through the Channel, often with very low numbers recorded. In late March, though, good numbers of Garganey were sometimes observed in light winds and in the presence of a sea breeze, especially in late morning and early afternoon. These sea breezes, which in the Channel prevail from the west-southwest direction, often reach Force 3.

The highest numbers of ducks observed seem to prevail following a light westerly wind during the previous night, followed by an increasing breeze in the morning as well as Force 3–5 west-northwesterly in the afternoon. On the other hand, strong westerly to northwesterly winds of Force 4–5 or more at night often resulted in low numbers the following morning, but if wind strength decreased by late morning there was often an increase in flock numbers in the afternoon.

NW	W	SW	S	SE	E	NE	N
49,608	18,460	8,911	8,218	9,938	2,847	6,345	746

Table 5. Total number of ducks counted during each wind direction for the period 1987–2013

Beaufort Scale	0–2	3–4	5–6+
Total duck numbers	8,283	21,430	38,792

Table 6. Total number of ducks counted during West and West-Northwest winds in the various wind forces for the period 1987–2013

The highest numbers of ducks counted in the Channel during westerly to northwesterly winds have occurred in Force 3–4 winds, intensifying in stronger winds, i.e. Force 5–6 (Table 6). There seemed to be a correlation between increase in duck numbers and increase in wind strength. Also, this often led to high numbers in the following days, especially with stable atmospheric conditions.

Discussion

It is evident from the data collected over many years from the Malta-Gozo Channel that a primary factor influencing duck migration is the lunar phase. A correlation apparently exists between frequency in duck migration and the phases of the moon (Fig 3). Besides other non-meteorological variables, it is highly probable that during their nocturnal flights migrating ducks somehow enhance their orientation by utilising the night skies, particularly the full moon phase. It appears, as suggested by Martin (1990), that some kind of visual cues from the stars and/or the moon or from the ground below would seem necessary for correct orientation at night.

The peak migration of ducks observed in this study habitually concentrated around the full moon, indicating that migratory ducks rely in some way on lunar phases to orientate their routes. On the other hand, lack of moonlight seems to hinder the incidence of duck migration and often results in insignificant numbers of ducks observed. Since the numbers observed varied in quantity and frequency according to the lunar phase and were presumably only part of the entire migratory stream of ducks, it can be assumed that this adaptation is probably also employed by the main migratory stream passing through.

Garganeys seem to be the duck least influenced by the lunar phase although, in general, peak numbers also tend to coincide with the full moon. In fact, especially during the latter part of the duck migration, it is not uncommon for this species to be present during days with least moonlight, but always in the waxing crescent phase. The other duck species, on the other hand, seem to be very faithful to the full moon phase.

It is possible that one of the main reasons ducks exploit the lunar phases during nocturnal flights is that moonlight enhances their ability to re-align in case of drift. There is considerable evidence that visual cues are of primary importance not only in initiating the direction of orientation but also in maintaining it throughout the nocturnal journey. These visual cues may be associated with the stars and the moon and also involve the use of topographical landmarks as guides or beacons (Martin 1990). Thus, clear skies with calm winds and a good presence of moonlight seem to improve decision-making during nocturnal flight and hence orientation. It can therefore be assumed that unless their physiological state dictates otherwise and no adverse atmospheric conditions are encountered, correctly orientated nocturnally migrating ducks continue to fly into the early morning hours without the need of stopping. This probably explains the lack of migrating ducks observed arriving pre-sunrise especially on days nearer the full moon, when the migratory stream should be most intense. It is most likely, therefore, that the ducks will have continued their nocturnal flight without stopping and therefore completely overshooting the Maltese Islands. Hence in such cases compensatory measures were not required. According to Richardson (1978), Elkins (1983) and Kerlinger & Moore (1989), most nocturnal migrations take place in weather that provides the 'ideal' conditions of calm, light or following winds with little cloud cover and good visibility, both prior to the time of departure and during the actual flight.

During peak migration, ducks were observed from 1–2 hours after sunrise often with a gradual increase in numbers throughout the day. This might indicate that these first diurnal migrants involve birds that while still many kilometres offshore re-alignment was necessary possibly due to drifts caused by developing offshore sea breezes or an increase in wind strength. In such conditions ducks would need to compensate and re-align their direction of flight. This seems to indicate that most ducks observed approaching the Maltese Islands are part of a migratory stream travelling through the Central Mediterranean on a broad front, and when forced to re-align some of them encounter land and approach it as a visual cue. The topography of the coast eventually leads them to the mouth of the Channel, utilising the leading line effect, noted also by Falzon (1995). That day-flying migrating birds are influenced by visual cues from the landscape below seems well accepted, along with the idea that these birds frequently follow so-called leading lines. These are usually large topographical features such as rivers, hill and mountain ridges, coasts and valleys (Mead, 1983; Baker, 1984). Birds can also adjust their orientation directly to topographical features, which then serve as leading lines. This is particularly common during exceptional weather conditions, such as strong winds (Schüz et al., 1971). If migrants follow coastlines at low altitudes in these cases, they can reduce the effects of head or side winds and save energy and time even if this migration along leading lines to some extent involves a detour (Berthold, 1993).

Headwinds can affect the timing or duration of flights as well as numbers aloft. Birds sometimes take off later than normal in the day or evening when winds are unfavourable or improving; they may also descend or land earlier than normal when winds are unfavourable or deteriorating (Richardson, 1978a; Bloch et al., 1981; Bolshakov, 1981; Wege & Raveling, 1983; Kerlinger & Gauthreaux, 1985; Helbig & Laske, 1986). In fact, most of the heavier passages observed have mainly coincided with strong head or side winds during the waxing gibbous phase of the moon, i.e. the 7 days before the full moon. This seems to indicate that these include birds that have been misplaced from their normal route and are re-aligning themselves. This is also apparent in the fact that ducks also show a tendency to settle offshore especially during strong winds, before eventually departing in the afternoon when conditions improve. Also, before setting off on a nocturnal migration leg, nocturnal migrants in migratory disposition often show a characteristic activity pause, resting or sleeping period (Bergman, 1941).

Weather is determined by a pattern of passing low pressure and high pressure which often succeed each other, and these pressure cells have characteristic patterns of wind direction associated with them. Low pressure systems in spring, especially over Tunisia and Libya, seem to restrict bird migration – including ducks – heading towards the Maltese Islands. Associated persistent overcast skies, often with rainy conditions and easterly winds, generally resulted with a halt in duck migration even if this occurred during peak migration and 'ideal' moon phase. Emlen (1975) states that cases of poor orientation are associated with low overcast, rain, fog or cloud cover, often of several days' duration. This therefore indicates that such conditions are inadequate for orientation, and birds might have to modify their routes. It seems probable that in such conditions migration is diverted away from the Islands. Extreme atmospheric conditions in North Africa may also divert north-bound ducks to other routes, completely bypassing the Maltese Islands. On the other hand, stable atmospheric conditions, with associated high pressure systems in the Central Mediterranean and North Africa, has resulted as the optimum weather for duck migration. The synoptic situations which give the most favourable migration weather are those providing substantial areas of clear skies and favourable winds

over the area of origin of the migrant, particularly if persistent (Elkins, 1983). It is evident that clear skies during both night and day coincide with larger number of duck movement.

It is thus apparent that duck movement is correlated with atmospheric conditions coupled with the lunar phase. Low and high pressure cells have characteristic patterns of wind direction associated with them, and ducks alter and adjust their movement according to the prevailing weather conditions so as to pick winds most suitable for assisting travel.

The presence of several duck species in the pre-nuptial migration in the Malta-Gozo Channel highlights the importance of this marine Important Bird Area. It is an important migratory and stopover site, particularly for the red-listed Ferruginous Duck. Safeguarding the entire Channel from excessive disturbance and development is of utmost importance.

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Assessing the significance of the impact of Yellow-legged Gulls *Larus m. michahellis* on nesting Mediterranean Storm-petrels *Hydrobates pelagicus melitensis* on the island of Filfla

Benjamin Metzger • Nicholas Barbara • John J. Borg • Joe Sultana

Abstract

Around 160 pairs of Yellow-legged Gull nest on Filfla, approximately one fourth of them (with an increasing tendency) in the boulder scree inside a Mediterranean Storm-petrel colony. Preliminary population estimates on the basis of capture-mark-recapture data and population models reveal a number of ca 17,000–20,000 Storm-petrel individuals for the Filfla colony. This number includes an unknown number of non-breeders and prospectors. At present, there are no data available whether the Filfla population is stable, declining or increasing. However, the concern lies with overall trends in seabird species from the tubenose family showing drastic declines around the world (Croxall et al., 2012).

Over the years, several hundred Yellow-legged Gull pellets have been collected and analysed. Storm-petrels are a common prey of Yellow-legged Gulls, especially during chick-rearing. A specialised predator behaviour of only few specimens of the Yellow-legged Gull population foraging on Storm-petrels, as shown in studies from Spain (Sanz-Aguilar, 2008; Sanz-Aguilar et al., 2009; Oro & Martinez-Abrain, 2007), could not be verified. Nevertheless, significantly more Storm-petrel remains were found close to the nests of gulls nesting in the boulder scree. Similar results, confirming that more Storm-petrels are taken by Yellow-legged Gulls which nest in closer vicinity to Storm-petrels were shown for Benidorm Island (Oro et al., 2005). Yellow-legged Gulls on Filfla have been frequently observed chasing Storm-petrels along the shore-line of the islet, when the latter come in to their nesting sites at night. Quantifying the total amount of Storm-petrels taken by Yellow-legged Gulls each season and drawing conclusions on the significance of the gulls' impact is not (yet) possible. In 2013 alone, however, the remains of 42 Storm-petrels were collected from Filfla, which is about 0.2% of the entire population. Considering that (i) a large (unknown) proportion of regurgitates is probably dropped in areas where they are not found and (ii) a breeding attempt of a pair fails if one of the partners is predated, it can be assumed that much more than 0.2% of the breeding Storm-petrel population on Filfla are predated each year.

Introduction

Predation is one of the key factors affecting bird populations, and predator-prey interactions can influence strongly survival and breeding success of both predators and prey (Spear, 1993). High rates of predation can result in decreasing population densities and may lead to local extinction of prey populations (Kress, 1997; Oro, 2003; Martinez-Abrain et al., 2003; Oro et al., 2006). Predator control, removal or exclusion have therefore become an important measure for helping endangered or declining bird populations worldwide, with a special focus on introduced terrestrial predators on small islands hosting seabird colonies (Jones et al., 2008; Nogales et al., 2004).

Over the last decades, many populations of large gull species *Larus spp.* have shown a significant increase (Blokpoel & Spaans, 1991). As polyphagous and widely opportunistic feeders, gulls take advantage from an increase in fishery discards, intensified agri- and aquacultural practices and high densities of open landfills, (Oro et al., 1995; Thibault et al., 1996; Duhem et al., 2008). Because of their potentially detrimental impact on smaller and threatened syntopic species (Feare, 1991; Vidal et al., 1998; Finney et al., 2003; Oro & Martinez-Abrain, 2007), many wildlife managers perceived gulls as pest species and in some regions extensive culling programmes were started (Morais et al., 1998; Bosch et al., 2000; Muntaner, 2000; Oro & Martinez-Abrain, 2007).

Individuals within a population, however, make use of different resources, with only a few specialising on certain prey species. For example, in some populations only few skua specimens have been shown to specialise in catching birds. Votier et al. (2004) figured out specialised behaviour in Great Skuas *Stercorarius skua* and showed that only 10% of the population studied specialised in feeding on birds. Bird-eating individuals laid eggs earlier, had larger first eggs and produced heavier chicks than individuals feeding on fish or being generalists. Another example underlining the success of specialists within populations is the Western Gull *Larus occidentalis*. Specimens foraging exclusively on fish were shown to have a higher lifetime reproductive success than the generalists and also higher than individuals specialised in foraging on refuse (Annett & Pierotti, 1999). In another study, some Yellow-legged Gulls *Larus michahellis* showed specialisation in predation behaviour with only few individuals of the population feeding on birds (Oro et al., 2005). On a Spanish island, Sanz-Aguilar (2008) clearly showed that it is only necessary to remove the few specialised individuals from the population to increase significantly the

breeding success of threatened species such as Storm-petrels. Predator-prey interactions, however, even when the same species are concerned, are highly dependent on local peculiarities such as abundance and availability of various food sources, topography and accessibility of e.g. nesting sites. Even adaptation behaviour of prey towards common predators can be site specific. Local authorities should therefore refrain from generalisation, while consulting conservation scientists need to carry out assessments carefully, before considering any potentially drastic measures, such as large-scale culling of predators.

This report, while reviewing the results of long-term studies on Filfla carried mainly by authors JS and JJB (Borg & Cachia-Zammit, 1987; Borg et al., 1995; Borg, 2008; Sultana et al., 2011) is trying to assess the significance of the Yellow-legged Gulls' impact on the Storm-petrel population of Filfla.

Material and Methods

STUDY SITE

Filfla (35°47'N, 14°24'E) is a small, rocky uninhabited island composed of Blue Clay and Upper Coralline Limestone, located in the Central Mediterranean Sea, about 4.5 km southwest of Malta. The islet has an area of 6 ha and consists of a 60 m high, flat-topped plateau surrounded by steep cliffs. At the foot of the cliffs, the lower perimeter of the island consists mostly of loose scree and large boulders (constantly eroding), rich in small deep crevices, natural burrows and cavities. For many years, Filfla was used by the British forces (air, land and sea) as a target for bombing practice. This has certainly increased erosion, and although bombing practices were stopped in 1971 (Sultana et al., 2011), the past military activity still influences the species composition and availability of nesting habitats into the present time. The plateau and particularly the scree are sparsely vegetated with a rather disturbed rupestral community. Hosting colonies of three breeding seabird species, the island is an Important Bird Area (IBA) and has the status of a strictly protected Nature Reserve. It has legal protection as an SPA within the European Natura 2000 network.

Filfla is also home to the nominate race of the endemic Maltese Wall Lizard *Podarcis f. filfolensis* and other biota of interest including endemic land snails and Coleoptera species (http://www.mepa.org.mt/filfla).

The species

The Yellow-legged Gull *Larus michahellis* is a large and common, polyphagous seabird, with the nominate race *L. m. michahellis* being ubiquitous across the Mediterranean basin. The global population trend of the species is increasing (BLI, 2014). Due to recent taxonomic splits the population size is unknown, nevertheless the IUCN red-lists the species as Least Concern. (BLI, 2014).

In Malta, Yellow-legged Gulls are common winter visitors and fairly common residents (Sultana et al., 2011). However, suitable breeding areas for the species are primarily limited by human disturbance, particularly illegal hunting. The breeding sites for the Maltese Islands are restricted to Filfla and to very small colonies in the south of Malta and Gozo (Crymble et al., 2020). Egg-laying on Filfla mainly takes place at the end of March; clutch-size is usually 2–3 eggs. Both partners take turns to incubate for about 30 days, and the first chicks fledge by the third week of May, with the last in early July. The main part of the colony breeds on the upper plateau of the island. In Malta, the species has been protected since 1980 (LN 68/1980) and is furthermore especially protected during the reproductive season (LN 97/2006).

The boulder and scree areas of Filfla, which form a lower belt around the Plateau, are home to the largest colony of the Mediterranean Storm-petrel *Hydrobates pelagicus melitensis*. One of the smallest representatives of the order Procellariiformes, Storm-petrels lay a single white egg per season, with an incubation time of about 40 days. Chick rearing takes about 63–70 days. Most of the time, Storm-petrels are pelagic and only return to land to breed. To avoid predation, they only return at night. Within the Filfla colony, the species shows a prolonged breeding period, lasting from mid-April to mid-October (Borg & Sultana, 2010; Sultana et al., 2011). As two complete breeding cycles fit into this period, Borg & Sultana (2010) suggested that the population may be split into two different groups: early and late breeders, e.g. according to age-classes.

From the 1960s to the mid-1980s the population of Storm-petrels nesting on Filfla was estimated at about 10,000 pairs (Sultana & Gauci, 1970, 1982; Sultana et al., 1975). From the mid-1980s onwards, however, numbers have been reported to decline (Massa & Sultana, 1990–91, 1993) and the latest population estimate is 5,000–8,000 breeding pairs (Borg & Sultana, 2002, 2004; Raine et al., 2009). Today, Filfla alone still holds ca 50% of the known Mediterranean population (Sultana & Borg, 2006), underlining Malta's high accountability for the future of this phylogenetic unit, currently treated as a subspecies of the European Storm-petrel. The Storm-petrel is included in Annex I of the EU Birds Directive, in Annex II of the Bern Convention and in Annex II of the Barcelona Convention. In Malta, the species has been legally protected since 1932 (GN 111/1932).

Overall reasons for the current decline of the Mediterranean Storm-petrel are loss of habitat, disturbance as well as

predation by rats *Rattus spp.* and Yellow-legged Gulls (Sultana et al., 2011). Fortunately, Filfla is free of rats. Further threats to this long-lived species at sea might be oil spills and chemical pollution.

Sultana & Gauci (1982) reported the first pairs of Yellow-legged Gulls nesting in the screes in the early 1970s, soon after bombing was stopped. In recent years, the numbers of gulls nesting in the scree area inside the Storm-petrel colony are still increasing. Storm-petrel nests on Filfla are generally situated deep inside small crevices, where eggs, chicks and incubating adults are relatively safe from gull predation. The spatial contiguity of nesting sites of the two species, however, increases the predation risk for adult Storm-petrels significantly, and the birds which are slow afoot are easy prey when approaching or leaving their nest.

Methods

YELLOW-LEGGED GULLS

The Yellow-legged Gull colony on Filfla has been monitored by Maltese ornithologists – author JS, author JJB and Charles Gauci – and ringers from the BirdLife Malta Bird-ringing Scheme since 1982 (Sultana et al., 2011). Monitoring consisted in annual colony visits aimed at counting eggs and nests and ringing the gull chicks.

Four visits to Filfla were carried out during the 2012 and 2013 breeding seasons. Due to the fact that the limestone plateau is otherwise inaccessible, visits to the plateau were possible by means of an Alouette II helicopter of the Armed Forces of Malta. Two trips per season were carried out (30 March and 11 July in 2012; 27 March and 18 May in 2013). During the late March visits, all Yellow-legged Gull nests on the plateau were counted, marked with a colour spray (to avoid double counts) and GPS-mapped. Their status was noted (number of eggs, whether incubated or not). Yellow-legged Gull chicks were ringed in May with an individually coded metal ring, provided by the BirdLife Malta Bird-ringing Scheme. Additional site visits were made to the lower boulder and scree areas to count the nests and eggs (6 April 2012, 14 April 2013) in this area. Gull chicks were ringed later in the season, when the island was visited for nocturnal mist-netting sessions of Storm-petrels.

MEDITERRANEAN STORM-PETRELS

The Storm-petrel colony on Filfla has been monitored by Maltese ornithologists and bird ringers mainly via mist-netting and ringing adult birds at night since 1968. In 2012 mist-netting on Filfla was carried out during 10 night visits, spanning from April to September. During each of these visits, two mist-nets (12 m each) were set up at the same place in the lower NW region of the islet, inside a large Storm-petrel colony. Nets were left open all night and no lures were used.

In 2013 mist-netting on Filfla was carried out during 15 night visits, spanning from mid-June to end of August. Up to two 12 m mist-nets per site were set up in seven different places along the scree area at the foot of the plateau, spread around the island. Nets were left open all night and no lures were used.

Different models were applied to the capture-mark-recapture data of Storm-petrels in order to get realistic numbers for the size of the Filfla colony. All models and analyses were performed by Steffen Oppel (RSPB) using R and packages therein such as SPACECAP for spatial analyses (Gopalaswamy et al., 2012).

COLLECTION AND ANALYSIS OF REGURGITATE SAMPLES

Yellow-legged Gull regurgitates from Filfla have been collected from 1986 to 2008 (Borg et al., 1995) and their contents analysed (Sultana et al., 2011). These pellets consisting of bones, fur, feathers and other indigestible matter ejected by the gulls were collected from the plateau surface as well as from the rubble and boulder scree beneath the cliffs.

The remains represent a small fraction of the prey taken and were probably mostly regurgitated by incubating adults and young gulls, as the majority of these pellets were collected from the immediate vicinity of nests or in some instances from the nest itself. It is very probable that most adults regurgitate pellets at sea (Borg et al., 1995; Sultana et al., 2011) and collected samples are therefore only indicative of the scale and diversity of species the gulls prey on.

In 2012 and 2013 the collection and analysis of Yellow-legged Gull regurgitates containing bird remains continued, with regurgitates collected from the plateau at every helicopter visit and during visits to the scree in the evenings, prior to the nocturnal ringing sessions. Whenever possible regurgitate locations were GPS-mapped. All regurgitates were stored as per location in labelled plastic bags and taken to mainland Malta for further analysis. Gull regurgitates were carefully disassembled using tweezers and examined for bird remains. The remains (beaks, skulls, bones, whole legs and feathers) were separated by species and identified to genus or species level where possible.

TRAIL CAMERAS CLOSE TO GULL NESTS

In order to get a better picture of individual predation events at night, we piloted a small study using trail-cameras. The hypothesis was that Storm-petrels would be at highest risk of being predated on the ground, when passing close to a gull's nest on the way to find their own nest entrance at night. The

work was part of an internship by MSc student Thomas Klinner at Vienna University. Bal-Chatri traps were used to catch adult incubating gulls on seven different nests, during a day-visit to the lower scree area on 14 April 2013. Captured birds were ringed, measured and individually marked with a purple animal-marker spray (Raidex).

Trail cameras (four Bushnell, one DK 30; Deke Technology HK Co) with a motion sensor and an infrared light source were placed in the vicinity of the nests of the two marked gulls and three other gull nests located in the boulder screes on 14 April 2013. Each camera was set up in a way that the incubating gull and the vicinity of the nest were filmed for one minute, as soon as the motion sensor was triggered. All cameras were re-collected on 9 May 2013.

VISUAL OBSERVATIONS OF PREDATION EVENTS

When Storm-petrel mist-netting events were carried out on moonlit nights, visual observations of gulls flying around over the Storm-petrel colony or its vicinity were made. These non-systematic observations were made with the naked eye only.

Results

MONITORING THE GULL COLONY

After bombing of the island stopped, the Yellow-legged Gull population on Filfla slowly increased in the 1970s, peaking at ca 200 breeding pairs in the decade 2000–2009 (Sultana et al., 2011; Raine et al., 2009). For the period 1999–2009, Sultana et al. (2011) identified a mean hatching success of 91.2%. They also found that 79.2% of hatched chicks fledged successfully.

Table 1 lists the number of gull nests (breeding pairs) found on the plateau and boulder scree, as well as the total number of eggs counted and gull chicks ringed, during the 2012 and 2013 breeding seasons. Figures 1 and 2 show the locations of the gulls' nests for 2012 and 2013 breeding seasons respectively.

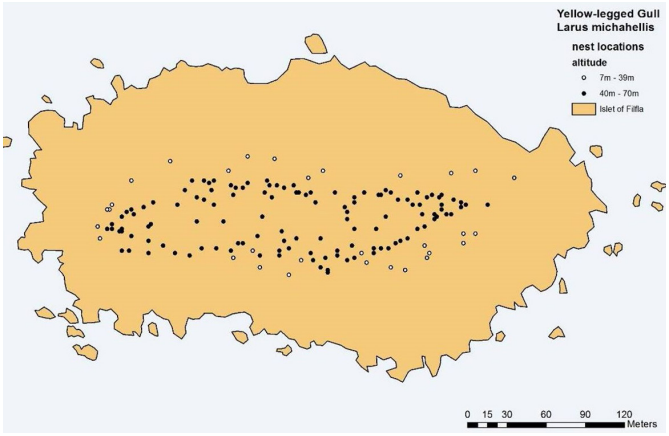

Fig. 1. Location of Yellow-legged Gull nests on Filfla in 2012. Black dots = on the plateau; white dots = in the lower scree below the cliffs

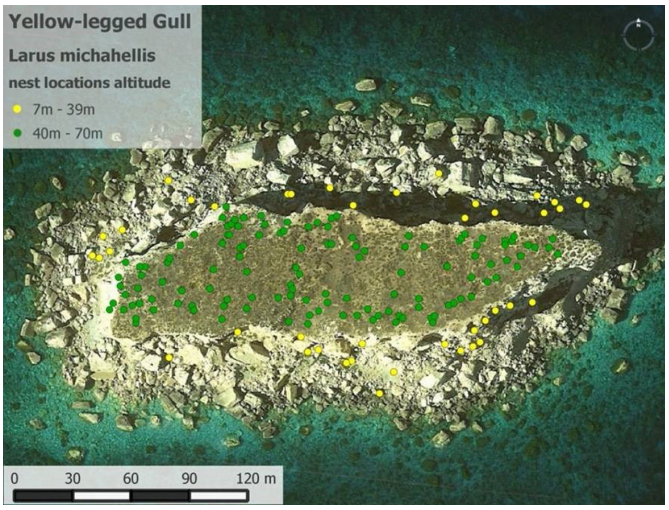

Fig. 2: Location of Yellow-legged Gull nests on Filfla in 2013. Green dots = on the plateau; yellow dots = in the scree below the cliffs (Image source: Google Earth).

For the 2012 breeding season no estimates on reproductive success could be achieved for the plateau (see * in Table 1), as the ringing trip to Filfla plateau, which had been scheduled for 21 May, was cancelled at the last minute by AFM due to technical problems with the helicopter. When the helicopter was available on 11 July, all gull chicks had fledged. Only two gull chicks were ringed in the boulder scree on 19 June 2012,

	2012	2013
Number of nests on plateau	123	125
Number of nests in scree	33	43
Number of nests total	**156**	**168**
Number of eggs on plateau (median; min; max)	249 (3; 0; 3)	246 (2; 0; 3)
Number of eggs in scree (median; min; max)	82 (3; 0; 3)	105 (3; 0; 3)
Number of eggs total (median; min; max)	**331 (3; 0; 3)**	**351 (3; 0; 3)**
Number of chicks ringed on plateau	-*	96
Number of chicks ringed in scree	2	2

Table 1
Results of monitoring of Yellow-legged Gull breeding population on Filfla for the 2012 and 2013 breeding seasons

indicating a very low fledging success of less than 2.5% of the total amount of eggs laid.

For the 2013 breeding season, the approximate breeding success was estimated by the amount of gull chicks reaching the age at which they could be ringed. At this age, mortality is usually low and only increases again post-fledging. 96 chicks were ringed on the plateau (18 May 2013), four flew off and three were too small to be ringed. This means an overall maximum of 103 gull chicks reached an age close to fledging. This indicates that around 42% of laid eggs reached fledging. Only two gull chicks were ringed in the scree region of the islet. Up to three more chicks were seen but went hiding at inaccessible places. A few more chicks at the scree area might have reached the age of fledging unnoticed. Nevertheless, we estimated that less than 10 gull chicks from the boulder scree area reached the age of fledging (< 9.5% of laid eggs). Three ringed adult gulls were found dead in the boulder scree. They had been ringed as chicks at the Filfla colony in 1994, 2003 and 2010 respectively. Two other immature gulls without rings were also found dead in the same area.

MONITORING THE STORM-PETREL COLONY

Between 1968 and 2011 about 20,700 Storm-petrels have been ringed on Filfla. Around 2,400 (ca 12%) of these have been recaptured in the same period (Sultana et al., 2011). In 2012, during 10 nocturnal mist-netting sessions in the Storm-petrel colony in the NW area of the island, a total of 2,002 Storm-petrels were ringed and 564 recaptures registered. Furthermore, one Storm-petrel was recovered with an Italian ring. It had been ringed in 2011 as a chick on Marettimo Island, off the west coast of Sicily, indicating some exchange among the Storm-petrel colonies in the Mediterranean; more evidence of such exchange can be found in Borg & Sultana (2009).

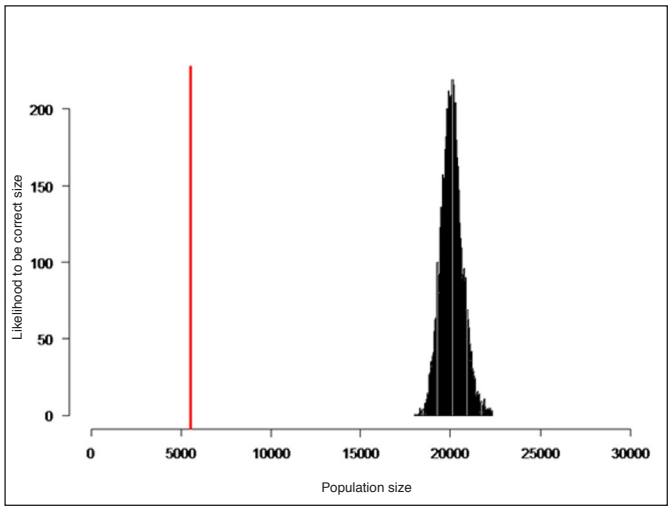

Fig. 3. Population size estimates of the Storm-petrel colony on Filfla. Results of the Jolly-Seber model. Red line = total number of individuals captured in 2013; black curve = likelihood of correct population size estimate

In 2013 the setup of mist-netting locations was diversified in order to get a spatial resolution of the colony and hence a better population size estimate. A total of 15 nocturnal mist-netting sessions were carried out at seven locations in the colony, spread over the lower scree area around the islet. A total of 4,646 birds were ringed and 1,940 recaptures registered.

A simple Jolly-Seber model for the population estimate on the basis of capture and recapture events of 2013 revealed a total of 20,088 (95%CrI 18,942–21,366) individuals for the Filfla colony, with a recapture probability of 2.1% (2.0–2.3%), (Fig. 3). For spatial analysis, using SPACECAP, a total number of 6,412 detections events (captures and recaptures) of 5,537 individual birds were included (2013 only, seven mist-net locations) (Fig. 4). Results of this more sophisticated model are currently in preparation. However, a preliminary density estimate from these data revealed 4,372 (95% CrI 4,065–4,702) birds/ha based on a simple SECR model with half-normal detection function. With an approximate size of the area of 4 ha, this gives a population size of around 17,500 birds.

COLLECTION AND ANALYSIS OF REGURGITATE SAMPLES

From 1990 to 2008, 413 pellets containing bird remains were collected from Filfla (Table 2). Avian remains ranged from small *Phylloscopus spp.* warblers to Purple Heron *Ardea purpurea* (Borg & Cachia-Zammit, 1987; Borg et al., 1995; Borg, 2008; Sultana et al., 2011). From the sample analysed, the European Storm-petrel formed 54% of the total avian prey present in the sample. Pellet analysis has also shown that the birds caught by scree-nesting gulls differ in food contents considerably from those caught by the plateau-nesting gulls. Migratory species feature more often in the diet of the plateau gulls, whereas 87% of the pellets taken from scree-nesting gulls contained remains of European Storm-petrel (compared to just 29% in pellets from plateau nests) (Sultana et al., 2011).

In 2012, during the first visit to the plateau on the 30 March, only one old gull pellet containing Storm-petrel remains was

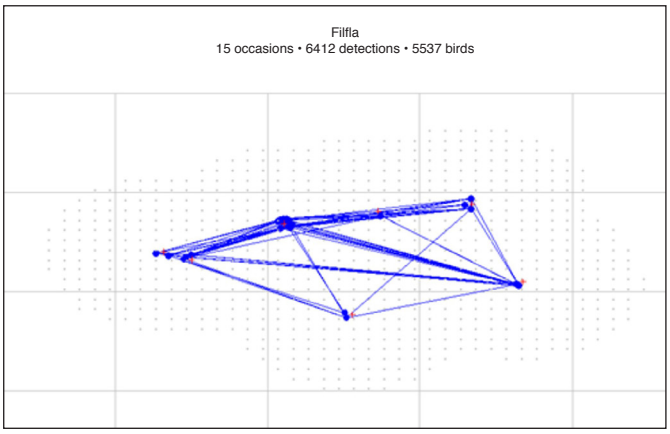

Fig. 4. Spatial distribution and relative distances between the different mist-netting sites on Filfla 2013

plateau	qty		qty	boulder scree	qty
Alauda arvensis	1	*Melopsittacus undulatus* (Budgerigar)	2	*Agapornis sp.* (lovebird)	1
Alcedo atthis	1	*Merops apiaster*	3	*Apus apus*	7
Anthus sp.	1	*Motacilla flava*	3	*Columba livia f. domestica*	3
Anthus trivialis	4	*Muscicapa striata*	2	*Coracias garrulus*	1
Apus apus	10	*Oenanthe oenanthe*	3	*Coturnix coturnix*	2
Apus melba	1	*Oenanthe hispanica*	1	*Delichon urbicum*	1
Ardea purpurea	1	*Oenanthe sp.*	1	*Erithacus rubecula*	1
Arenaria interpres	1	*Oriolus oriolus*	2	*Gallinula chloropus*	1
Columba livia f. domestica	3	*Passer hispaniolensis*	1	***Hydrobates pelagicus***	**131**
Coracias garrulus	1	*Phoenicurus phoenicurus*	2	*Ixobrychos minutus*	1
Coturnix coturnix	24	*Phylloscopus sibilatrix*	1	*Jynx torquilla*	1
Crex crex	1	*Phylloscopus sp.*	2	*Larus ridibundus*	1
Porzana sp.	1	*Porzana porzana*	4	*Merops apiaster*	1
Cuculus canorus	1	*Saxicola rubetra*	2	*Motacilla alba*	1
Delichon urbicum	2	*Streptopelia turtur*	5	*Motacilla flava*	3
Falco naumanni	1	*Sylvia communis*	3	*Muscicapa striata*	1
Ficedula hypoleuca	4	*Sylvia sp.*	10	*Otus scops*	1
Ficedula sp.	3	*Tringa glareola*	1	*Phylloscopus collybita*	1
Gallinula chloropus	11	*Tringa sp.*	1	*Turdus philomelos*	2
Hirundo rustica	1	*Turdus merula*	1	*Upupa epops*	1
Hydrobates pelagicus	**59**	*Turdus philomelos*	1		
Larus ridibundus	1	*Upupa epops*	1	total from plateau	196
Luscinia megarynchos	1	unidentified	10	total from scree	162
				total	**358**

Table 2. Number of avian prey specimens in Yellow-legged Gull pellets from Filfla plateau and boulder screes collected from 1990–2008 (table compiled from published and unpublished data).

found. A second flight to the plateau was carried out on 11 July, when the gulls chicks had fledged and most regurgitates decomposed. Gull regurgitates containing Storm-petrel and other bird remains found during these visits were GPS-mapped alike, collected and stored for further analyses (number of birds, rings). Out of 28 collected pellets, remains of 27 Storm-petrels and 8 specimens of other bird species were extracted.

In 2013, a total of 55 gull pellets from Filfla (35 from the plateau and 20 from the lower boulder scree) containing the remains of 71 bird specimens were collected and analysed. The analyses revealed that these regurgitates contained remains of 42 Storm-petrels, remains of 13 other identified bird species, 10 unidentified passerines, 1 unidentified non-passerine, 2 fishes, 2 squid and 1 migratory locust (Table 3).

By far the largest proportion of remains belonged to Mediterranean Storm-petrels, i.e. 55% of the total number of prey specimens found in the pellets containing bird remains (Fig. 5). These numbers are in line with data collected by authors JJB and JS.

The diet composition of birds nesting on the plateau differs significantly from birds nesting in the boulder scree. Only 46% of prey remains from the plateau were identified as originating

species	plateau	scree
Apus apus	4	0
Coturnix coturnix	1	0
Curruca melanocephala	1	0
Delichon urbicum	1	2
Hirundo rustica	2	0
Hydrobates pelagicus	**20**	**22**
Merops apiaster	1	0
Monticola solitarius	1	0
Otus scops	1	0
Passeriformes sp.	8	2
Phylloscopus sp.	0	1
Saxicola rubetra	1	0
Turdus merula	1	0
Turdus philomelos	1	0
unidentified non-passerine	1	0
NON-AVIAN		
Locusta migratoria	1	0
Pisces sp.	0	2
Teuthida sp.	0	2
total	**45**	**31**

Table 3. Number of avian (and three non-avian) prey specimens in Yellow-legged Gull pellets from Filfla plateau and boulder screes collected during the 2013 breeding season

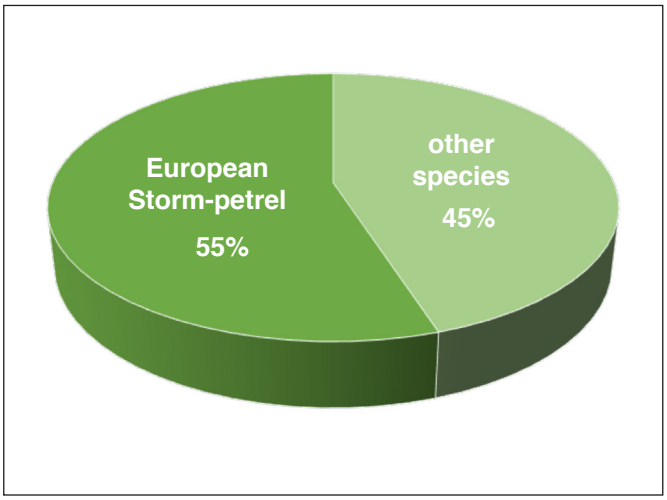

Fig. 5. Yellow legged gull pellets containing bird remains collected on Filfla 2013. Percentage of total avian prey items originating from European Storm-petrels and other bird species (see Table 3).

from Storm Petrels, whereas 71% of prey items in pellets from gulls of the boulder screes were Storm-petrels (Fig. 6).

This leads to a conservative estimate of 0.27 Storm-petrels per scree-nesting gull, compared to 0.08 Storm-petrels per plateau-nesting gull (Fig. 6). These 2013 data fit very well into the overall picture of the larger sample collected over a longer period of time, analysed by author JJB.

Over the years, various Yellow-legged Gull pellets analysed contained remains of Storm-petrels that had been ringed on Filfla (Sultana et al., 2011), e.g. the sample of 2013 revealed 3 ringed specimens.

TRAIL CAMERAS CLOSE TO GULLS' NESTS

On 14 April 2013 two adult gulls belonging to two different nests were captured with Bal-Chatri traps placed on seven nests of gulls at the scree area. Both birds were marked individually with purple animal-marker spray (Fig. 7). One bird was a first-time capture while the other had been ringed as a chick on the plateau on 18 May 2009. The trail cameras that were placed in front of both nests with colour-marked birds and three other nests at the boulder scree did not record any predation event between 14 April and 9 May.

VISUAL OBSERVATIONS

Sultana et al. (2011, pp. 85–86) state: "To catch Storm-petrels, the gulls need to be active at night, as this is the time that Storm-petrels come ashore. Gulls have in fact been observed to be active on moonlit nights chasing and harassing Storm-petrels as these arrived on Filfla (Borg et al., 1992, 1994). Storm-petrels are mostly preyed upon during the gulls' chick-rearing period."

Observations have shown that most Storm-petrels are caught on moonlit nights, when gulls were noted flying and calling throughout the night.

These observations could be confirmed for the breeding seasons 2012 and 2013, when gulls were calling at night and seen flying intensively along the Filfla shoreline in the moon light, obviously chasing smaller birds in flight.

Discussion

The results of the nest-mapping of the Yellow-legged Gulls on Filfla show that the overall breeding population size in the years 2012 and 2013 is slightly lower than before (ca. 160 pairs vs 200 pairs). While the population on the plateau in these years was stable at around 125 pairs and might have reached a saturation point, the population in the boulder screes had increased from 33 to 43 pairs. Breeding success on the other hand was considerably higher on the plateau (only known for 2013), compared to the boulder scree in 2012 and 2013 (ca 40% vs 2.5% and 9.5% respectively), indicating that the latter area is a sub-optimal breeding habitat for the gulls.

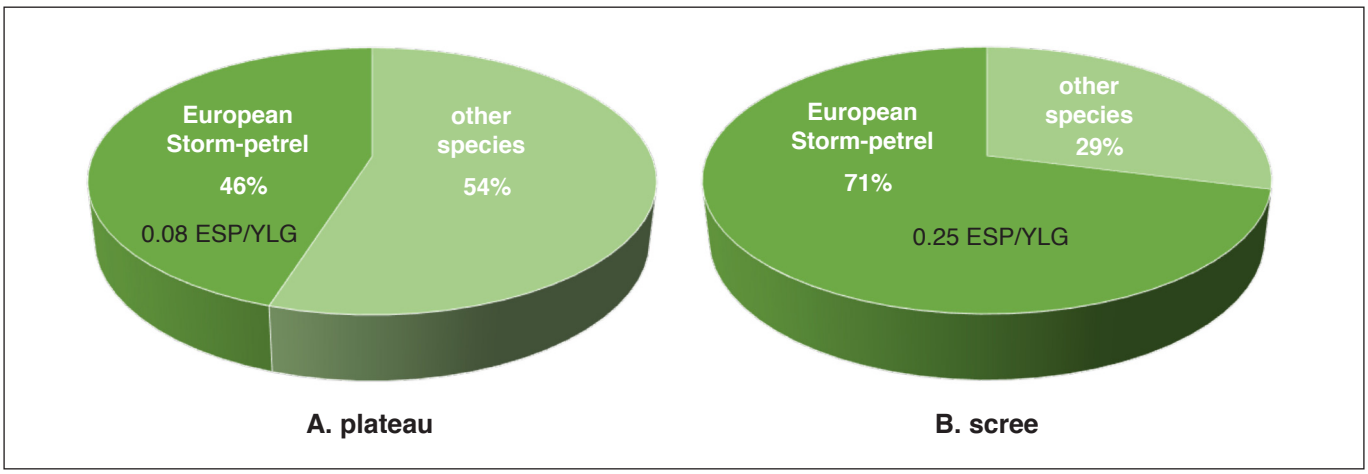

Fig. 6. Proportion of different prey items in pellets of Yellow-legged Gulls collected from Filfla during the breeding season 2013 from (A) the plateau, and (B) the boulder scree.

Benjamin Metzger

Fig. 7: Adult Yellow-legged Gull on Filfla marked with purple animal-marker spray

The overall fledging success of the years 2012 and 2013 was much lower than previously described. Methodological differences in the approach account probably at least for a part of this variation. Only careful continuation of the monitoring of the gulls, both on the plateau and in the scree, will tell whether the population is stable, declining or increasing. For the Maltese Islands, however, the Yellow-legged Gull is certainly not a superabundant species (compare with, e.g. Blokpoel & Spaans, 1991; Vidal et al., 1998).

To get realistic population size estimates of the Storm-petrel colony on Filfla is relatively difficult. The birds come to land exclusively at night. The colony is spread over the entire boulder scree area around the island and nests are hidden deep inside inaccessible cracks and crevices. Colony attendance and availability during breeding is generally low, as one partner stays far out at sea for days in a row while the other is incubating, not leaving the nest for the same period of time. On the other hand, the breeding season spans over a long period of time and – as in other Procellariiformes – non-breeding prospecting birds develop brood patches and may appear in the colony throughout the breeding season just like breeders. Only regular and intensive nocturnal capture-mark-recapture setups with mist-nets around the island in the peak breeding season – along with complex spatial population models – can produce reliable population size estimates. Both preliminary simple models for a rough population size estimate on the basis of capture and recapture events (2013 only) revealed comparable numbers (around 20,000 for the Jolly-Seber model; 16,000–19,000 for the SECR model). They are within the same magnitude order as estimated by authors JJB and JS on the basis of their long-term monitoring exercise. As in other long-lived seabird species, conclusions on population trends can only be drawn if such a setup is repeated with a comparable effort over several years (Oro et al., 2005; Sanz-Aguilar et al., 2009).

Semi-quantitative collection and analysis of gull regurgitates continued and revealed similar results to previous studies (Borg & Cachia-Zammit, 1987; Borg et al., 1995; Borg, 2008; Sultana et al., 2011). Storm-petrels form part of the regular diet of Yellow-legged Gulls on Filfla, mainly during the chick rearing period of the gulls. Storm-petrel predation appears significantly higher in the boulder scree than on the plateau. Within each region, no specific pattern of pellet distribution could be determined that would indicate specialised foraging behaviour by some individual gulls. Therefore, culling of single specialised gulls as done in other gull colonies in the Mediterranean does not seem an adequate measure for Filfla. Quantifying the total amount of Storm-petrels eaten by gulls on Filfla each season remains unclear, as a large but otherwise unknown proportion of pellets are certainly dropped at sea, blown off the rocks and the plateau or go unnoticed in cracks and crevices in the scree.

Unfortunately, the trail cameras installed close to the gulls' nests were not able to shed light on the predation behaviour and rate. Due to a long period of bad weather with strong winds and high swell, visits that had been planned to adjust camera settings and to change batteries and memory-cards were cancelled and therefore no proper video material was retrieved. Other problems included too-weak infrared light sources of at least some of the trail cameras and short connection of an external 12V car battery for power supply.

Observations carried out during moonlit nights (Sultana et al., 2011; recent observations by all authors) clearly show that a large proportion of gulls actively chase incoming Storm-petrels in the air along the Filfla shoreline at night. No information could be gathered on the success rate or the total amount of successful attacks. Similar predation behaviour by Yellow-legged Gulls was also noted on Marettimo island (Sicily), where gulls were seen catching and eating Storm-petrels (B. Massa, pers. comm.).

A number of possible actions to control predation by the gulls have been contemplated before but considering the local scenario vis-à-vis birds and humans, no concrete action has ever been taken. Measures from other seabird colonies in the

Mediterranean or other regions, where the negative impact of large gull species like Yellow-legged Gulls on endangered seabirds has been confirmed, included large scale culling, specific removal of specialised gulls and oiling of eggs (Oro & Martinez-Abrain, 2007; Sanz-Aguilar, 2008; Sanz-Aguilar et al., 2009).

Conclusion

We propose to continue and to specify the monitoring of both Yellow-legged Gull and Mediterranean Storm-petrel populations in future. Similar conclusions have been drawn by Matias & Catry (2010) for a population of the Atlantic Yellow-legged Gull *Larus michahellis atlantis* on Selvagem Islands, predating to over 50% on seabird species, mainly White-faced Storm-petrels *Pelagodroma marina*. If it is shown that (a) the Storm-petrels on Filfla are indeed declining and (b) the Yellow-legged Gulls are one of the reasons for this decline, the local authorities should consider measures to reduce the impact of the gulls by limiting the amount of breeding pairs. The most suitable measure for the Filfla gulls is assumed to be the oiling of their eggs, with a focus on nests in the boulder screes. In our opinion, oiling would take considerable predation pressure from the Storm-petrels in a time when the predation rate is supposed to be highest, i.e. during late incubation and chick rearing of the gulls. In comparison to removing or destroying the eggs, oiling has the advantage that the gulls will continue incubating without producing a replacement clutch. Gulls with oiled eggs will simply abandon the eggs a few days before the assumed hatching date. At the same time, oiling of eggs seems to have lower impact on the birds' welfare than e.g. culling of adult gulls. It can be assumed that this moderate measure would create least friction related to the socio-cultural aspects of bird conservation versus predator control, which is important especially in Malta.

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Distance from flushing by Spanish Sparrow *Passer hispaniolensis*

John J. Borg

Introduction

Some species of birds tolerate human presence more than others and in some cases, they become so accustomed to human presence that they even choose to breed in close proximity to humans. This tolerance can be the result of a number of causes, such as human attitude towards birds and nature, availability of food, shelter and accessibility of breeding sites. To state that all members of a particular species are tolerant or the opposite is a gross over statement. In areas where birds are disturbed on a regular basis, they tend to become shy of humans but if the human attitude is the opposite, birds can develop a trusting nature and become rather tame (Attard-Montalto, 1999; Borg, 1999; Sultana et al., 2011).

The effect of urbanisation on birds has been widely studied, e.g. Marzluff et al. (2001) but it appears there have been very few studies on the subject of distance of flushing, that is, how close a human has to be before the bird flies away. The few studies that exist are related to management policies of parks and nature reserves (Cooke, 1980; Alvarez et al., 1984; Redondo, 1991; Fernandez et al., 2001).

Th present study was carried out over a three-year period in which the level of confidentiality and the distance of flushing by the resident "Spanish" Sparrow *Passer "hispaniolensis"* [1] from an approaching person were recorded. The aim was to compare the behaviour of urban individuals to those present in suburban and rural areas. The Spanish Sparrow is a very common breeding resident, present in all types of habitats in the Maltese Islands (Sultana et al., 2011).

Material and Methods

During the three-year period 2010–2012 five study areas were chosen to determine the level of confidence towards humans and flushing distance from approaching humans in Spanish Sparrows. The study covered the entire 12 months of each year and sites chosen ranged from rural to urban areas; (1) Mtaħleb – Miġra l-Ferħa area (rural), (2) Baħrija (sub-urban) and (3) Rabat, (4) Mdina and (5) Floriana-Valletta (urban) (Fig. 1).

Birds on the ground were always approached with a steady pace and the distance from where the bird flew off was measured by means of a Rolson ultrasonic distance measurer. Records were kept of the individual sexes and where possible age and behaviour of the bird at the time of observation, e.g. feeding, fighting or courting. The distance measured varied from <1 m from the subject to 6 m – birds taking off beyond the 6 m mark were not included in the study. Also, fighting males were excluded from the analysis as these birds can become so absorbed in what they are doing that they become oblivious of what is going on in their surroundings, as shown by Thake (1992–94).

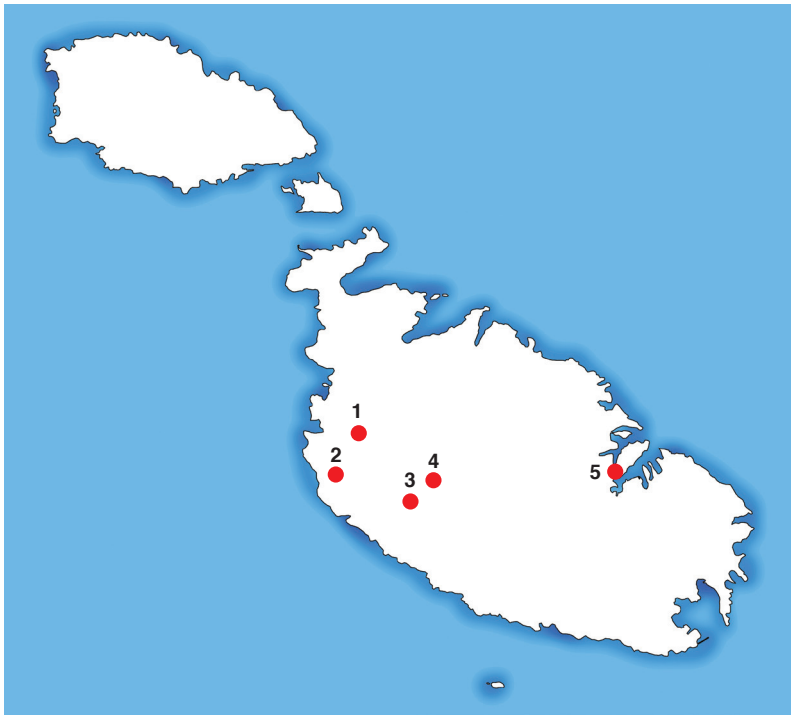

Fig. 1. The Maltese Islands, with study areas marked in red

The study subjects in the rural and sub-urban area frequented agriculture land and open spaces away from buildings, while observations in urban areas were carried out in main public areas such as village squares, main and secondary roads and public gardens, and at the Valletta Bus Terminus and thereabouts (Fig. 1). In the case of Mdina, regular visits to open air tea houses and coffee shops were made to observe and record the birds' behaviour at the different establishments. From these visits a total of 2,370 records were logged (Table 1).

Results

Birds present in rural areas that were more exposed to human disturbance such as bird shooting and noise generation deterrents (air cannon) deployed in agriculture land, were noted to be much more

Locality	adult ♂	adult ♀	imm. ♂	sex unknown
Miġra l-Ferħa	92	102	89	127
Baħrija	53	62	44	93
Rabat	152	202	89	101
Mdina	104	201	302	401
Valletta	33	55	23	45

Table 1. A total of 2,370 records were logged

diffident of humans than those present in urban areas. At Miġra l-Ferħa, it was only in the immediate surroundings of farmhouses that birds and humans were living in close proximity. In the other areas, away from human habitations, birds were very shy and flew away while still a long distance from the observer. The same behaviour was observed at Baħrija and Rabat. While birds in these two localities were tame in the village core, they were very shy on the periphery of the hamlet and town.

The birds present at the playing field at Howard Gardens (Mdina) are used to human presence and some were so tame that one male and at least three females were accepting scraps from the hand. The same tameness was also shown in parts of the city of Mdina, especially in open air cafeterias where birds regularly take food scraps from tabletops, even while patrons are sitting at the table. Similar tameness was also demonstrated at the Valletta Bus Terminus, where birds were seen hopping around among the pedestrians rather than flying away.

Sparrows were also present scavenging for scraps on and under tables in most open restaurants. In areas (e.g. cafeterias) where birds appeared to be shy of humans, they approached the empty tables once the humans left and furtively collected the food scraps and flew away to settle at a safe distance; in other instances birds were seen moving around under chairs and tables dodging human legs and feet.

In all the localities under study, single adult females showed a higher tolerance to humans than single adult males (Fig. 2). In mixed groups, males tended to be more wary of humans than females and usually took off first, followed by females, although exceptions have been noted. It was also observed that when only females were approached they tolerated a much shorter distance than when in the company of males.

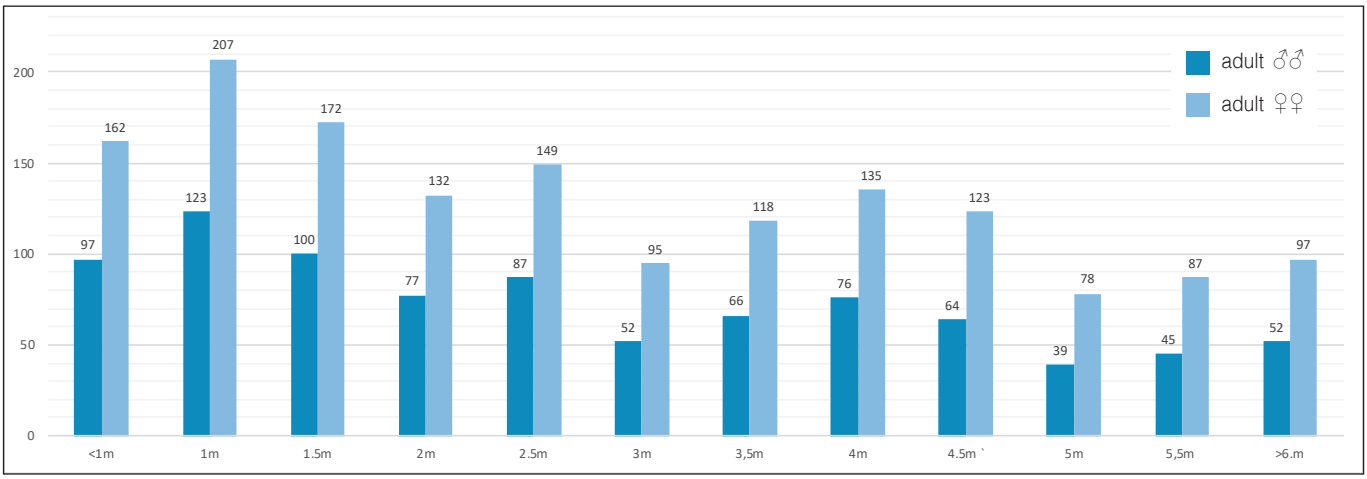

Fig. 2 Distance of flushing by adult males and females from all study areas combined

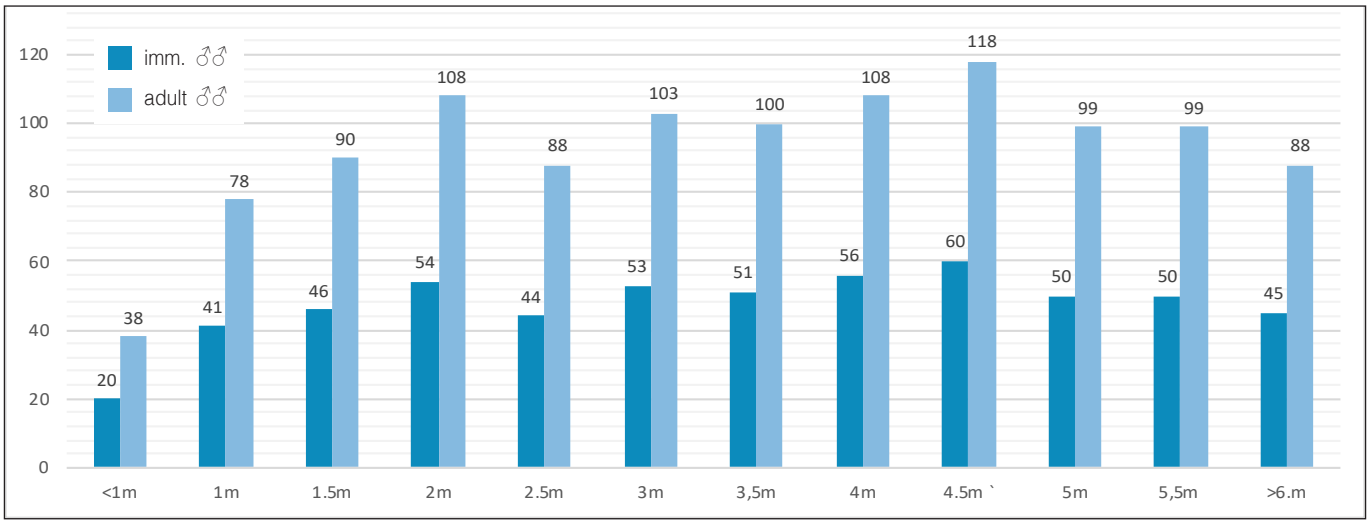

Fig 3. Both adult and immature males show a similar trend

First-year males followed the same trend of the adult birds (Fig. 3), with a tendency of being most approachable when in the company of adult birds (males and females). Single birds or small groups (2–4 birds) tended to fly away at a greater distance than when accompanied by adults. In regular feeding areas such as the Valletta Bus Terminus, Howard Gardens and the open air restaurant inside Mdina, some individuals lose their inhibition and boldly move among people. Some regular birds become so tame that they accepted scraps from the hand. The latter behaviour is most probably developed through experience as all the individuals seen appeared to be adults.

Seasonal variations

From March to October there was no significant difference in the birds' behaviour. But during cold winter spells (November to February), birds of both sexes become more tolerant to human presence. This is possibly due to the low temperatures, which led to scarcity of food availability, encouraging the birds to become bolder. Some male birds present in urban areas in winter were noted to flush at a greater distance than others of the same sex in the same group. It is possible these diffident birds could result from rural birds joining the urban birds at "traditional" feeding areas (e.g. village squares) in search of scraps in winter.

Conclusion

This study shows that Spanish Sparrows readily adapt to human presence and will not shy away whenever food is available. It also confirms that human behaviour influences the birds' behaviour, and similar research projects should be extended to other species, as results can be fundamental in specific and general conservation work.

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[1]The sparrow present in Sicily and the Maltese Islands has long been the subject of controversy about the specific identity (Sultana et al, 2011; Sultana & Borg, 2015), hence the quotation marks in "Spanish" and *"hispaniolensis"* Some authors refer to the Maltese and Sicilian populations as hybrid *P. Italian x P. hispaniolensis* (del Hoyo et al., 2009). In a recent study, Massa et al. (2022) recommended that the local species be named *Passer italie x hispaniolensis*.

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First confirmed record of Swinhoe's Storm-petrel *Hydrobates monorhis* (Swinhoe, 1867) in Malta

Stefano Miceli • Martin Austad

The South-east Aquaculture Zone, situated some 8.7 km off Marsaskala (35°52'15.5"N 14°40'20.3"E) is known to attract numerous seabird species including European Storm-petrels *Hydrobates pelagicus* and Black Terns *Chlidonias niger* (Borg, 2012). In the morning of 25 August 2019, a visit was conducted to the site and among the European Storm-petrels and Black Terns a larger storm-petrel type bird was noted. Upon close observations the bird was identified as a Swinhoe's Storm-petrel *Hydrobates monorhis*. During the trip 300+ European Storm-petrels and 60+ Black Terns were seen.

The first sighting of the bird was at 09.33, when it was first spotted by one of the authors (MA) who was at the front of the boat and called out the bird as a 'large petrel'. The bird was then seen by the first author (SM) who also took record shots of the bird.

Raymond Galea

Fig. 1. Swinhoe's Storm-petrel, observed off the coast of Marsaskala

The features noted during this first sighting by the two observers include the significantly larger size than European Storm-petrel, with which direct comparison could be made, the dark rump, the forked tail and the pale band across the upperwing coverts. Given this combination of features, Swinhoe's Storm-petrel was immediately suggested as the likely identity of the bird, also noting that this is the only dark-rumped Storm-petrel species which occurs somewhat regularly in the Western Palearctic. The extremely rare variant of Leach's Storm-petrel *Hydrobates leucorhous* with a darker rump, was excluded due to the presence of pale bases to the primary shafts which are typical of Swinhoe's Storm-petrel but absent in Leach's Storm-petrel variant (Howell & Zufelt, 2019).

The bird was spotted again around 20 min later in the same area. This time round the other birders and photographers, on board the boat were prepared, allowing for the bird to be seen by most and for better photographs to be taken. Subsequent analysis of the images further confirmed the identification.

A description submitted to the Malta Rarities and Records Committee, and the sighting and identification was accepted on a meeting held on 21 January 2020, based on the description and photographic evidence – this procedure is requisite considering this is a first record for the Maltese Islands. The Maltese name assigned to this species is *Kanġu tal-Lvant*.

The Swinhoe's Storm-petrel is a rare but regular vagrant to the Western Palearctic, with a number of records from the Atlantic and from the Gulf of Aqaba in the Red Sea. Its only known breeding colonies are in the NW Pacific, and the bird migrates to the northern Indian Ocean in winter. It is widely thought that an undiscovered breeding colony may be present somewhere in the North Atlantic, given the frequency of records in the area (e.g. Silva et al., 2015). However, it is very rare in the Mediterranean, with only four confirmed records until the Maltese record, consisting of one sick bird picked up in Genova (Italy) in August 1991, one bird trapped at Benidorm (Spain) in July 1994, one bird trapped at Cabrera (Spain) in August 1997 and another bird trapped at Benidorm in June 2013. All records until 2008 in the Atlantic and neighbouring seas are summarised by Flood (2009). A sighting in June 2017 off Haifa (Israel) was not accepted by the Israeli Rarities & Distribution Committee (IRDC, 2019). The Maltese bird therefore constitutes the first confirmed sight record in the Mediterranean.

Acknowledgements

The authors would like to thank birders/photographers (present onboard the boat) Manuel Mallia, Jonathan Pullicino, Kimberly Gauci Pullicino and Oriana Balzan for making their photographs available. We also thank Giovanni De Lazzari and Patrizia Patti from EcoMarine Malta who organised the trip on their vessel.

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Editorial Note

On 28 August 2022 a Swinhoe's Storm-petrel was again observed in the same area during another offshore boat trip. This constitutes the second confirmed record for Malta. Due to the propensity of such seabirds to return to the same areas, including out-of-range birds in the Atlantic such as Selvagens Islands (Portugal) and Rogaland (Norway) (Flood, 2009), it is conceivable, if not likely, that this involved the same individual from 2019.

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First confirmed sighting of Cory's Shearwater *Calonectris borealis* in Maltese waters

Aron Tanti

On 19 July 2019, BirdLife Malta organised its annual offshore boat trip for the general public to experience the evening congregations of Scopoli's Shearwaters *Calonectris diomedea* off the cliffs at Ta' Ċenċ in Gozo. Shearwaters form so-called rafts, which is when birds congregate offshore at the surface and wait for the cover of darkness to approach their nesting sites. The weather conditions were fair, with a light North-westerly wind and relatively calm sea.

The first part of the trip, which left from the jetty at Ċirkewwa (NW Malta) was relatively quiet, with sporadic sightings of Scopoli's Shearwaters and some Yellow-legged Gulls *Larus michahellis*, but upon approaching Ras il-Ħobż, off the south coast of Gozo, the numbers of Scopoli's rapidly increased.

Aron Tanti

Fig. 1. Cory's Shearwater, photographed off Ta' Ċenċ (Gozo) on 19 July 2019

Not far from one of the aforementioned rafts, off Ta' Ċenċ Cliffs at 19.31, a solitary *Calonectris* shearwater was observed alighting on the relatively calm water (Fig. 1) and preening calmly without taking much note of our presence. As the boat drifted slowly closer to the bird, it calmly took off, in parallel with the boat, permitting very good views of its take off. This made it possible to get several photographs of this individual, which were crucial to its identification, since distinguishing Scopoli's from Cory's Shearwaters is not always straightforward. The underwing is a major diagnostic when differentiating between the two species: in Cory's, almost all the visible primaries are dark on the underwing, while on Scopoli's they are whitish, with much less dark on the wingtip (Flood & Gutierrez, 2021; Svenson et al., 2022). The availablity of well-lit photographs featuring the underwing therefore became very useful in confirming the species.

The *Calonectris* shearwaters have been split into four distinct species: *Calonectris edwardsii* present in the Cape Verde Islands, *C. leucomelas* in the seas of Japan, *C. borealis* of the Atlantic Ocean and the Mediterranean *C. diomedea*. The latter two species were considered conspecific for many years, but are now classified as seperate species.

Flood &. Gutierrez (2019) give a detailed account of the breeding status of *C. borealis* in the Western Mediterranean. Their results indicate that sightings of *C. borealis* in Maltese waters may indeed increase in the near future.

The Maltese name assigned to Cory's Shearwater is *Ċiefa tal-Atlantiku.*

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Editorial note

On a similar boat trip off Ta' Ċenċ Cliffs (Gozo) on 25 July 2022 a bird was photographed by R. Galea and – upon confirmation by R. Flood – was also confirmed as *C. borealis*. The 2019 and 2022 records were submitted to the Malta Rarities and Records Committee meetings of 21 January 2020 and 21 January 2023 respectively and were unanimously accepted.

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First confirmed records of Eastern Yellow Wagtail *Motacilla tschutschensis* Gmelin, JF, 1789 in Malta

Stefano Miceli

Four species of wagtails *Motacilla spp.* are known to occur in the Maltese Islands: Western Yellow Wagtail *Motacilla flava,* a common passage migrant; Grey Wagtail *M. cinerea* and White Wagtail *M. alba,* both common autumn migrants and winter visitors (Sultana & Gauci 1982); and Citrine Wagtail *M. citreola*, a rare but relatively regular visitor since first recorded in 2012 (Bonavia, 2020).

Mario V. Gauci

Fig. 1. Eastern Yellow Wagtail, photographed at Salina nature reserve on 28 Dec 2019

On 22 December 2019 while birdwatching at the Salina Nature Reserve (35.94505ºN, 14.42334ºE) in the early morning, the author noted an unusual wagtail species when it was flushed unintentionally and called a few times in flight. It was immediately noticed that this was not one of the expected wagtail species, since the rasping calls were reminiscent of Citrine Wagtail, despite the bird visually resembling Western Yellow Wagtail.

Eastern Yellow Wagtail M. *tschutschensis* was immediately suspected, in view that there were a number of records in Europe at the time and the author had acquainted himself with its diagnostic calls from recordings available online. The author contacted birdwatcher Nicholas Galea, who arrived shortly after. Apart from its calls, the bird was quite distinctive visually, with a pale supercilium and dark ear-coverts, and white-tipped median and greater coverts forming two distinctive wingbars. The long hind-claw, a supporting feature for Eastern Yellow Wagtail, was also noted (Fig. 1). A number of sound recordings (using mobile phones and digital cameras) and photographs of the bird were taken. Sonograms were also produced using Audacity 2.3.3. The same morning, sound recordings of the bird's flight calls (Fig. 2a) were sent to Magnus Robb, who confirmed the bird was indeed an Eastern Yellow Wagtail.

The bird wintered at the Salina saltpans and was last seen on 14 April 2020, by which time it had moulted to breeding plumage. From late January, the bird also began producing a subsong. During its stay, the bird often disappeared for a few days, but could mostly be observed in the same general area of the saltpans. The bird often engaged in territorial behaviour with other birds, including White Wagtails and also a Water Pipit *Anthus spinoletta* which was wintering in the area. Sound recordings of this bird have been uploaded on xeno-canto.org (XC533274, XC533273, XC533272, XC524357, XC524358).

The intermediate extent of the supercilium of the bird suggests it belongs to the nominate subspecies *Motacilla tschutschensis tschutschensis*, also called Alaskan Wagtail (Bot et al., 2014). The bird, sexed as a male, was aged as a first winter, in line with most other records in the Western Palearctic. The bird returned in autumn 2020, but was less faithful to the saltpans, with only sporadic sightings from 24 October 2020 to 3 February 2021.

At the time, the Salina bird was thought to be the first confirmed record for Malta. However, on revisiting a record of an out-of-season Yellow Wagtail present in winter 2016 at Smart City in Kalkara (35.89095ºN, 14.54270ºE) the author discovered that he had taken a sound recording of this bird due to the suspicion that it could be something interesting. The call (Fig. 2b), available on xeno-canto.org (XC657318) seemed a perfect match for Eastern Yellow Wagtail. The author therefore contacted Edward Bonavia, who also confirmed the identification with Magnus Robb. The Smart City bird therefore constitutes the first confirmed record for Malta. Figure 2 illustrates the diagnostic flight calls of both birds, each with a characteristic 'foreleg' (the near-vertical ascent at the start of each call). The Smart City bird was present from at least 26 October 2016 to 8 December 2016. This bird also appeared to be a first winter male.

Both records were submitted to the Malta Rarities and Records Committee (MRRC) and were accepted on 21 January 2020 and 21 January 2021 for the Salina and Smart City birds respectively. The Maltese name given to this species is *Isfar tas-Siberja.*

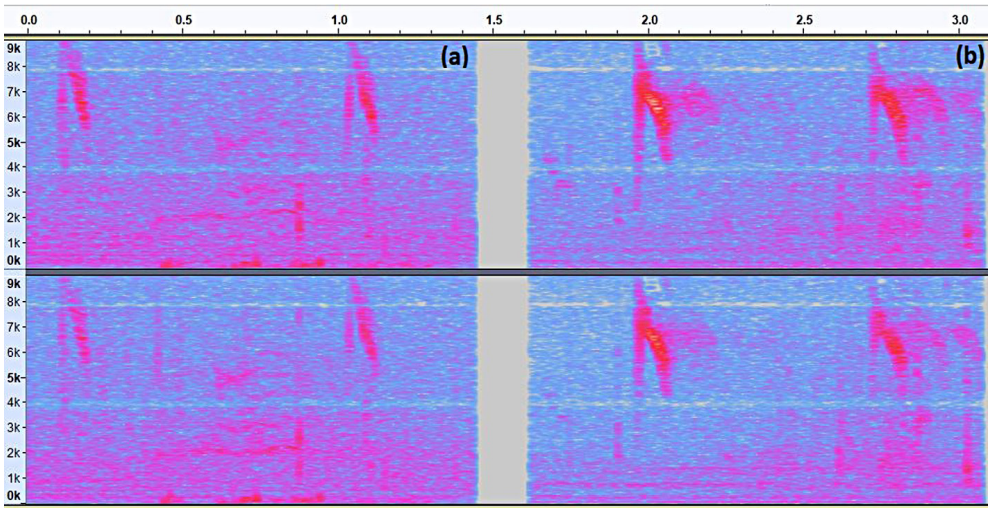

Fig. 2. Composite sonogram of (a) two flight calls of the Salina Eastern Yellow Wagtail (recorded on 22 December 2019) and (b) two flight calls of the Smart City Eastern Yellow Wagtail (recorded on 4 December 2016). Sonograms produced using Audacity 2.4.2.

Both the autumns of 2016 and 2019 were influx periods of Eastern Yellow Wagtail in the Western Palearctic. In autumn-winter 2016 birds were reported from the United Kingdom, Sweden, France and Portugal (Ławicki & van den Berg, 2016; Ławicki & van den Berg, 2017), while in autumn-winter 2019 birds were reported from the United Kingdom, Sweden, Norway, France, Ireland, Portugal and even the Canary Islands (Ławicki & van den Berg 2019; Ławicki & van den Berg 2020a). On 8 February 2020, 13 individuals were found in a single rice field in Portugal (Ławicki & van den Berg 2020b). This pattern suggests that there is a good chance of Eastern Yellow Wagtails reaching Malta whenever there are influxes into Europe.

There is a previous claim of the occurrence of this taxon in Malta given by Fenech (2010). This claim refers to a stuffed adult male in a local collection. The specimen is not dated and no further details given about how it was assigned to this taxon. Noting that the identification of this taxon away from its core range on morphological criteria alone is questionable, this record is highly doubtful. Furthermore, this record is not mentioned in Fenech (2017), whereas it should theoretically have been included as a full species entry due to the taxonomy used. This is strange noting that this record would be highly significant in a Western Palearctic context, since there was only one confirmed record in the Western Palearctic before 2010 – a bird taken on Fair Isle in 1909 and identified from genetic analysis (Collinson et al., 2013). This sheds further doubt on this record and has in fact not been accepted by the MRRC.

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The first occurrence of Red-flanked Bluetail *Tarsiger cyanurus* in Malta

Joseph M. Mangion • Caldon Mercieca

The Red-flanked Bluetail *Tarsiger cyanurus* also known as the Orange-flanked Bush-robin, is a small passerine that breeds in the Taiga, with some breeding occurring in North and East Finland, and winters in SE Asia (del Hoyo et al., 2005). In recent times its range seems to be expanding. It was formerly classed as a member of the Turdidae family but is now generally considered as an Old World Flycatcher, and a member of the Muscicapidae family (BirdLife International, 2016), although Svensson et al. (2022) listed it with the chats.

In recent years, this species has been noted to expand its wintering grounds westwards, with numerous sightings in several European countries, as summarised by Mikkola & Rajasärkkä (2014).

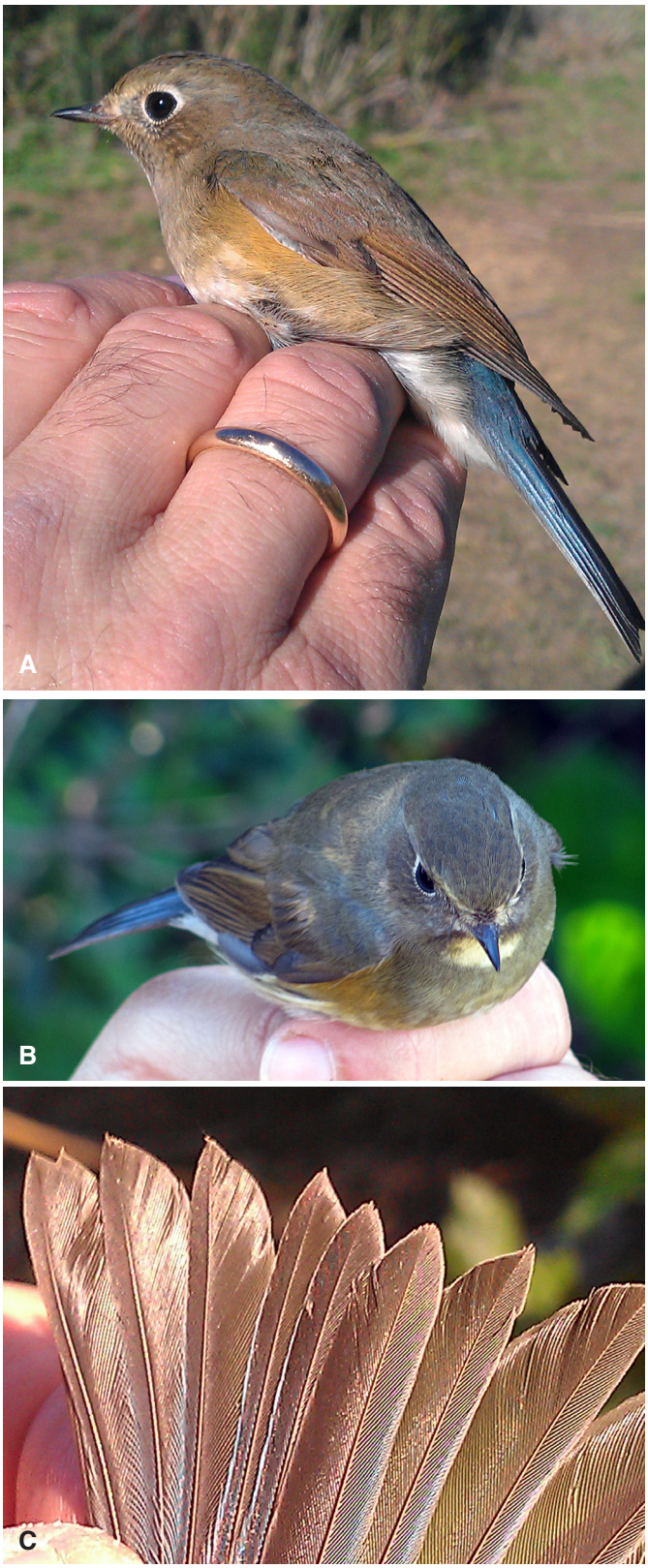
During a bird ringing session at Wied il-Luq, Buskett (35.8572011N; 14.4039013E) Malta on 17 November 2013, a bird was netted in a patch of degraded vineyard. The area was developing into a maquis habitat, with partly open areas and partly vegetated with shrubs of Lentisk *Pistacia lentiscus*, stray vines Vitaceae, Bramble *Rubus ulmifolius*, with scattered Olive trees *Olea europaea* and Fig trees *Ficus carica* as well as a mix of Maltese Ferule *Ferula melitensis* and other typical Mediterranean vegetation.

The initial appearance of the bird from the rear hinted towards a bluish, canary-sized bird thought to be an escapee. When the bird's head was inspected, however, it was more reminiscent of the European Robin *Erithacus rubecula*, with a hint of a pale supercilium. The rump and tail were a striking cobalt blue (Fig. 1A). The bird also sported a greenish blue sheen over most of its upperparts, a clearly delineated cream-coloured throat patch (Fig. 1B), a narrow white eye-ring, orange flanks and dark legs, leaving no doubt as to the identification of the bird as a Red-flanked Bluetail *Tarsiger cyanurus*.

The measurements lifted from the bird after it was ringed were:

- wing length (max chord) 75.5mm
- weight 10.3g
- fat score 0
- muscle score 1.

The bird was aged as a first-calendar-year bird (1cy), based on the shape of the rectrices (Fig. 1C), which had pointed tips as opposed to more rounded tips in adult birds; and also from slight contrast between a number of moulted inner greater



Photos by Caldon Mercieca

Fig. 1. Red-flanked Bluetail ringed on 17 Nov 2013, showing (A) side view, (B) front view showing pale throat patch, and (C) rectrices

coverts and the outer ones, which is typical of first-year birds (Svennson, 1992, 2023).

Sexing the bird proved to be a bigger challenge, and while the general impression in the field was that the bird was a male, it was left unsexed. The authors sought expert advice on the ageing of the bird by examination of photos taken in the field. One opinion was very certain that this specimen was a 1cy male, especially based on the very saturated cobalt blue rump and tail presumably impossible for any young female. Others however preferred not to sex the bird.

Since the Red-flanked Bluetail did not yet have a Maltese name, the authors assigned it the name *Fjamma Kaħla*.

This record was submitted to the Malta Rarities and Records Committee and was accepted and published in the MRRC second report (Bonavia, 2017).

The authors would like to thank Mr Magnus Hellström, Mr Lars Svensson, Mr Marc Illa and Mr Roni Väisänen for their authoritative contribution on ageing and sexing of the bird from photos taken in the field.

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Malta Rarities and Records Committee – 4th Report

Edward Bonavia

Introduction

This is the fourth report of the Malta Rarities and Records Committee (MRRC) covering the years 2018–2022. The previous reports appeared in *Il-Merill* 32 (2010), *Il-Merill* 33 (2017) and *Il-Merill* 34 (2020). This report reviews five committee meetings which were held at the National Museum of Natural History (NMNH), Mdina on

- 05 March 2019
- 21 January 2020
- 21 January 2021
- 25 January 2022
- 20 January 2023

Discussions and decisions on some of the submitted records were also carried out online between committee members when appropriate.

The members serving on the Committee were

- Raymond Galea (Chairman)
- Edward Bonavia (Secretary)
- John J. Borg (representing NMNH)
- Martin Austad (member)
- Ian Balzan (member)
- Denis Cachia (member)
- Caldon Mercieca (member)

The Secretary and Chairman at times sought the advice of international experts before deciding on some of the records.

Regulations

The regulations which appeared in the first report together with the update in the second report were retained.

Nomenclature adopted for the official Malta Bird List

Edward Bonavia updates the official *Malta Bird List* annually. This is published on the BirdLife Malta website. Nomenclature and sequence follow the HBW/BirdLife World bird list. Edward Bonavia and Victor Falzon give Maltese names for any new bird species accepted by the MRRC.

Species requiring a description

Ideally all records of very scarce species should be submitted to the MRRC with a field description and, when available, with a photograph. Species that have been recorded less than 20 times (including new species) in the Maltese Islands require a description. Some species listed below, however, (despite being recorded more than 20 times) still require a description to be officially accepted, as these are very difficult to identify in the field. The MRRC may also ask for a description of other species it deems necessary. The following isan updated list of species that require a description.

White-headed Duck *Oxyura leucocephala*
Red-breasted Goose *Branta ruficollis*
Greylag Goose *Anser anser*
Bean Goose *Anser fabalis*
Greater White-fronted Goose *Anser albifrons*
Common Scoter *Melanitta nigra*
Common Goldeneye *Bucephala clangula*
Smew *Mergellus albellus*
Goosander *Mergus merganser*
Ruddy Shelduck *Tadorna ferruginea*
Marbled Teal *Marmaronetta angustirostris*
Red-crested Pochard *Netta rufina*
Tufted Duck *Aythya fuligula*
Greater Scaup *Aythya marila*
Blue-winged Teal *Anas discors*
Baikal Teal *Sibirionetta formosa*
Laughing Dove *Streptopelia senegalensis*
Black-bellied Sandgrouse *Pterocles orientalis*
Pin-tailed Sandgrouse *Pterocles alchata*
Red-necked Nightjar *Caprimulgus ruficollis*
Egyptian Nightjar *Caprimulgus aegyptius*
White-throated Needletail *Hirundapus caudacutus*
White-rumped Swift *Apus caffer*
Little Swift *Apus affinis*
Corncrake *Crex crex*
Baillon's Crake *Zapornia pusilla*
Striped Crake *Aenigmatolimnas marginalis*
Purple Swamphen *Porphyrio porphyrio*
Allen's Gallinule *Porphyrio alleni*
Red-knobbed Coot *Fulica cristata*
Demoiselle Crane *Grus virgo*
Little Bustard *Tetrax tetrax*

Great Bustard *Otis tarda*
African Houbara *Chlamydotis undulata*
Red-throated Loon *Gavia stellata*
Leach's Storm-petrel *Oceanodroma leucorhoa*
Swinhoe's Storm-petrel *Hydrobates monorhis*
Sooty Shearwater *Puffinus griseus*
Cory's Shearwater *Calonectris borealis*
Manx Shearwater *Puffinus puffinus*
Balearic Shearwater *Puffinus mauretanicus*
Western Reef-egret *Egretta gularis*
Great White Pelican *Pelecanus onocrotalus*
Pygmy Cormorant *Phalacrocorax pygmeus*
European Shag *Phalacrocorax aristotelis*
Pacific Golden Plover *Pluvialis fulva*
Greater Sandplover *Anarhynchus leschenaultii*
Caspian Plover *Anarhynchus asiaticus*
Spur-winged Lapwing *Vanellus spinosus*
Sociable Lapwing *Vanellus gregarius*
White-tailed Lapwing *Vanellus leucurus*
Upland Sandpiper *Bartramia longicauda*
Slender-billed Curlew *Numenius tenuirostris*
Bar-tailed Godwit *Limosa lapponica*
Red Knot *Calidris canutus*
Broad-billed Sandpiper *Calidris falcinellus*
Purple Sandpiper *Calidris maritima*
Buff-breasted Sandpiper *Calidris subruficollis*
Pectoral Sandpiper *Calidris melanotos*
Long-billed Dowitcher *Limnodromus scolopaceus*
Red-necked Phalarope *Phalaropus lobatus*
Red Phalarope *Phalaropus fulicarius*
Terek Sandpiper *Xenus cinereus*
Pallas's Gull *Larus ichthyaetus*
European Herring Gull *Larus argentatus*
Glaucous Gull *Larus hyperboreus*
Roseate Tern *Sterna dougallii*
Arctic Tern *Sterna paradisaea*
Lesser Crested Tern *Sterna bengalensis*
Long-tailed Jaeger *Stercorarius longicaudus*
Arctic Jaeger *Stercorarius parasiticus*
Atlantic Puffin *Fratercula arctica*
Razorbill *Alca torda*
Little Auk *Alle alle*
Common Murre *Uria aalge*
Little Owl *Athene noctua*
Black-winged Kite *Elanus caeruleus*
Griffon Vulture *Gyps fulvus*
Eastern Imperial Eagle *Aquila heliaca*
Golden Eagle *Aquila chrysaetos*
Levant Sparrowhawk *Accipiter brevipes*
White-tailed Sea-eagle *Haliaeetus albicilla*
Red Kite *Milvus milvus*
Rough-legged Buzzard *Buteo lagopus*
Long-legged Buzzard *Buteo rufinus*
Blue-cheeked Bee-eater *Merops persicus*
American Kestrel *Falco sparverius*
Sooty Falcon *Falco concolor*
Lanner Falcon *Falco biarmicus*
Peregrine Falcon ssp *Falco peregrinus pelegrinoides* (Barbary Falcon)
Red-eyed Vireo *Vireo olivaceus*
Brown Shrike *Lanius cristatus*
Red-tailed Shrike *Lanius phoenicuroides*
Great Grey Shrike *Lanius excubitor*
Masked Shrike *Lanius nubicus*
Eurasian Jackdaw *Corvus monedula*
Rook *Corvus frugilegus*
Common Raven *Corvus corax*
Carrion Crow *Corvus corone*
Eurasian Blue Tit *Cyanistes caeruleus*
African Blue Tit *Cyanistes teneriffae*
Great Tit *Parus major*
Greater Hoopoe-lark *Alaemon alaudipes*
Bar-tailed Lark *Ammomanes cinctura*
Dupont's Lark *Chersophilus duponti*
Mediterranean Short-toed Lark *Alaudala rufescens*
Black Lark *Melanocorypha yeltoniensis*
Temminck's Lark *Eremophila bilopha*
Horned Lark *Eremophila alpestris*
White-winged Lark *Alauda leucoptera*
Crested Lark *Galerida cristata*
Booted Warbler *Iduna caligata*
Olivaceous Warbler *Iduna pallida*
Isabelline Warbler *Iduna opaca*
Melodious Warbler *Hippolais polyglotta*
Aquatic Warbler *Acrocephalus paludicola*
Blyth's Reed Warbler *Acrocephalus dumetorum*
Marsh Warbler *Acrocephalus palustris*
Paddyfield Warbler *Acrocephalus agricola*
River Warbler *Locustella fluviatilis*
Common Grasshopper-warbler *Locustella naevia*
Pale Rock Martin *Ptyonoprogne obsolete*
Hume's Leaf-warbler *Phylloscopus humei*
Pallas's Leaf-warbler *Phylloscopus proregulus*
Dusky Warbler *Phylloscopus fuscatus*
Iberian Chiffchaff *Phylloscopus ibericus*
Mountain Chiffchaff *Phylloscopus sindianus*
Radde's Warbler *Phylloscopus schwarzi*
Arctic Warbler *Phylloscopus borealis*
African Desert Warbler *Curruca deserti*
Barred Warbler *Curruca nisoria*
Western Orphean Warbler *Curruca hortensis*
Ménétries's Warbler *Curruca mystacea*

Moltoni's Warbler *Curruca subalpina*
Rüppell's Warbler *Curruca rueppelli*
Marmora's Warbler *Curruca sarda*
Tristram's Warbler *Curruca deserticola*
Wallcreeper *Tichodroma muraria*
Northern Wren *Troglodytes troglodytes*
White-throated Dipper *Cinclus cinclus*
Spotless Starling *Sturnus unicolor*
Rosy Starling *Pastor roseus*
Siberian Thrush *Geokichla sibirica*
Eyebrowed Thrush *Turdus obscurus*
Thrush Nightingale *Luscinia luscinia*
Siberian Rubythroat *Calliope calliope*
Orange-flanked Bush-robin *Tarsiger cyanurus*
European Pied Flycatcher ssp. *Ficedula hypoleuca speculigera* (Atlas Flycatcher)
Moussier's Redstart *Phoenicurus moussieri*
Black-throated Wheatear *Oenanthe seebohmi*
Desert Wheatear *Oenanthe deserti*
Pied Wheatear *Oenanthe pleschanka*
Black Wheatear *Oenanthe leucura*
White-crowned Wheatear *Oenanthe leucopyga*
Bohemian Waxwing *Bombycilla garrulus*
Alpine Accentor *Prunella collaris*
Rock Sparrow *Petronia petronia*
White-winged Snowfinch *Montifringilla nivalis*
Olive-backed Pipit *Anthus hodgsoni*
Rock Pipit *Anthus petrosus*
Citrine Wagtail *Motacilla citreola*
Eastern Yellow Wagtail *Motacilla tschutschensis*
Common Rosefinch *Carpodacus erythrinus*
Eurasian Bullfinch *Pyrrhula pyrrhula*
Mongolian Finch *Bucanetes mongolicus*
Redpoll *Acanthis flammea*
Lapland Longspur *Calcarius lapponicus*
Snow Bunting *Plectrophenax nivalis*
Black-headed Bunting *Emberiza melanocephala*
Rock Bunting *Emberiza cia*
Cretzschmar's Bunting *Emberiza caesia*
Cirl Bunting *Emberiza cirlus*
Yellowhammer *Emberiza citrinella*
Pine Bunting *Emberiza leucocephalos*
Yellow-breasted Bunting *Emberiza aureola*
Rustic Bunting *Emberiza rustica*
Little Bunting *Emberiza pusilla*
Chestnut Bunting *Emberiza rutila*
Rose-breasted Grosbeak *Pheucticus ludovicianus*

Category D species (i.e. species that there is reasonable doubt that they have ever occurred in a natural state) do not form part of the official Malta Bird List and therefore are not listed above.

Accepted Records

The following records have been discussed either during meetings of the MRRC or by discussions online. A few of these accepted records appeared in social media and were also discussed by the MRRC. Seven species are new to the Malta Bird List. All records include the name of the observers.

Greylag Goose *Anser anser*
1 at Pembroke on 15.12.19 (photographs and information obtained from a public Facebook group); 2 at Għadira on 27.10.21 (David Attard); 1 at Miġra L-Ferħa on 28.10.21 (Steve Zammit Lupi); 1 at Nadur (G) on 02.11.21 (reported by Adin Vella).

Greater White-fronted Goose *Anser albifrons*
1 shot at Marsaxlokk on 18.10.18 (picked up injured by police and handed over to BLM, released at Simar on 26.10.18).

Common Scoter *Melanitta nigra*
1 shot at Qawra on 02.12.78 (reported by Ray Galea).

Egyptian Nightjar *Caprimulgus aegyptius*
1 at Xrobb L-Għaġin on 18.04.22 (Steve Zammit Lupi, Edward Bonavia, Aron Tanti, Charles Coleiro, Daniel Bonnici, James Aquilina, Mark Bonello, Nicholas Galea, Raphael Soler, Stefan Azzopardi, Stefano Miceli, Chris Carbone).

Little Swift *Apus affinis*
1 at Ta' Żuta on 03.06.18 (Stefano Miceli, Michael Sammut, Joe Doublet, Emanuel Curmi)

Corncrake *Crex crex*
1 found exhausted at Sliema on 13.10.21 (reported by Chris Carbone).

Baillon's Crake *Zapornia pusilla*
1 at Ramla Dam from 25–29.04.18 (photos and info obtained from public Facebook (FB) group); 1 at Għajn Riħana from 30.03.19 to 02.04.19 (Stephen Cilia, Edward Bonavia, Aron Tanti, Nicholas Galea, Ray Galea, Charles Coleiro, Martin Austad et al.); 1 found exhausted at Paola on 19.03.20, ringed and released at Għadira on 20.03.20 (Nik Barbara, Edward Bonavia); 1 found dead at Victoria on 17.05.21 (reported by Adin Vella).

Little Bustard *Tetrax tetrax*
1♂ shot at Bengħisa on 24.04.74 (reported by Ray Galea).

Swinhoe's Storm-petrel *Hydrobates monorhis*
1 off Marsaskala (near tuna fish farms) on 25.08.19 (Martin Austad, Stefano Miceli, Manuel Mallia, Jonathan Pullicino) (1st record for Malta); 1 at Marsaskala fish farms on 28.08.22 (Luke Vella, Nicholas Galea, Edward Bonavia, Ian Balzan, Aron Tanti, Benjamin Grech, Caldon Mercieca, Chris Carbone, David Attard, Joseph M. Mangion, Mark Bonello, Raphael Soler, Ray Galea, Stefano Miceli, Stephen Cilia, Steve Zammit Lupi).

Cory's Shearwater *Calonectris borealis*
1 off Ta' Ċenċ on 19.07.19 (Aron Tanti) (1st record for Malta); 1 off Ta' Ċenċ on 25.07.22 (Ray Galea).

Terek Sandpiper *Xenus cinereus*
1 at Munxar Point l/o Marsaxlokk on 22.05.20 (Joe Sultana in *L-Għasafar ta' Malta*); 1 at Qbajjar on 23.05.20 (Edward Debono in public FB group); 1 at Għadira from 28.05.22 to 04.06.22 (Ray Galea, Stephen Cilia, Aron Tanti, Charles Gauci, Victor Cilia, Alex Casha, Nicholas Galea, Stefano Miceli, Edward Bonavia, Ian Balzan, Denis Cachia, Norman Bonavia, Martin Austad, Caldon Mercieca, Steve Zammit Lupi, Adin Vella, David Attard).

Pallas's Gull *Larus ichthyaetus*
1 (1st winter) at Żonqor on 17.03.18 (photos and info obtained from public FB group); 1 at Salina on 10.12.22 (Aron Tanti).

Lesser Black-backed Gull *Larus fuscus heuglini*
1 at Salina on 03.03.19 (Mario V. Gauci); 1 (1st winter) at Salina on 29.12.20 (Mario V. Gauci, Aron Tanti).

European Herring Gull *Larus argentatus*
1 at Salina on 21.01.20 (Mario V. Gauci).

Caspian Gull *Larus cachinnans*
1 (1st winter) at Salina on 30.12.16 (Mario V. Gauci); 1 (1st winter) at Qawra on 06.03.17 (Mario V. Gauci); 2 (1st winters) at Marsaxlokk on 17.02.18 (Edward Bonavia) 1 stayed at least till 28.02.18 (Luke Vella, Ray Galea, Aron Tanti et al); 1 (2nd winter) at Salina on 20.11.18 (Mario V. Gauci); 1 (1st winter) at Qawra on 03.12.18 (Edward Bonavia, Mario V. Gauci); 1 (1st winter) off NE coast of Malta on 09.12.18 (photographs and information obtained from a public Facebook group); 1 (1st winter) at Birżebbuġa on 02.01.19 (Edward Bonavia); 1 (1st winter) found dead at Salina on 02.01.19 (Nimrod Mifsud); 1 (1st winter) at Salina from 04-05.01.19 (Luke Vella, Adin Vella, Mario V. Gauci, James Crymble, Stefan Azzopardi); 1 (1st winter) at Marsaxlokk on 14.01.19 until at least 04.03.19 (Adin Vella, Aron Tanti); 1 (2nd winter) (Polish colour-ringed) at Salina on 21.01.19 and 24.01.19 (Martin Austad, James Crymble, Mario V. Gauci, Nimrod Mifsud, Edward Bonavia); 1 (1st winter) at Salina on 3 dates from 30.01.19 until 04.02.19 (James Crymble, Nimrod Mifsud, Edward Bonavia); 1 (2nd winter) at Salina on 06.02.19 (Mario V. Gauci); 2 (1st winters) at Salina on 10.02.19 (Ray Galea); 1 (2nd winter) at Salina on 13.02.19 (Mario V. Gauci); 1 (1st winter) at Salina on 16.02.19 (Ray Galea, Mario V. Gauci); 1 (1st winter) at Salina on 19.02.19 (Nimrod Mifsud); 1 (1st winter) at Salina on 03.03.19 (Mario V. Gauci); 1 (1st winter) at Salina on 12.03.19 (Mario V. Gauci); 1 (1st winter) at Salina on 13.03.19 (Mario V. Gauci); 1 (1st winter) at Salina on 22–23.03.19 (Edward Bonavia, Aron Tanti); 1 (1st winter) at Salina on 10.12.19 (Mario V. Gauci); 1 (2nd winter) off coast of Malta on 25.12.19 (photos and info obtained from public FB group); 1 (1st winter) at Salina from 29.12.19 to 04.01.20 (Mario V. Gauci, Stefano Miceli, Edward Bonavia, Noel Camilleri, Ray Galea, Aron Tanti); 1 (2nd winter) at Salina on 29.12.19 (Mario V. Gauci, Luke Vella); 1 (4th winter) at Salina on 01–02.01.20 (Mario V. Gauci, Aron Tanti); 1 (2nd winter) at Salina on 01.01.20 (Ray Galea); 1 (1st winter) at Salina on 05.01.20 (Mario V. Gauci); 1 (1st winter) at Salina on 06.01.20 (Mario V. Gauci).

Lesser Crested Tern *Thalasseus bengalensis*
1 at Tas-Safra on 24.08.20 (Patrick Spiteri in public FB group).

Arctic Jaeger *Stercorarius parasiticus*
1 at Qawra on 30.10.16 (Ray Galea, Charles Coleiro); 1 adult pale morph at Marsaskala on 10.05.18 (Edward Bonavia); 1 at Qawra on 14.09.19 (Caldon Mercieca, Charles Coleiro, Steve Zammit Lupi).

Razorbill *Alca torda*
1 at Mġarr (G) on 14.01.22 (reported by Adin Vella); 1 at Kemmuna on 15/01/22 (public FB group); 1 at Valletta on 25.11.22 (Edward Bonavia, Adin Vella, Nicholas Galea, Aron Tanti, Benjamin Metzeger, Chris Carbone, Raphael Soler, Ray Galea, Stefano Miceli, Steve Zammit Lupi, James Aquilina, Stefan Azzopardi, Stephen Cilia, Norman Bonavia, Nimrod Mifsud); 1 at Qawra on 01.12.22 (Patrick Spiteri in public FB group); 1 found freshly dead at Xwejni Bay on 01.12.22 (reported by Steve Zammit Lupi).

Levant Sparrowhawk *Accipiter brevipes*
1 at Għadira on 14.05.18 (David Attard); 1 at Ġebel Ciantar and Buskett on 11.10.20 (Michael Sammut, Emanuel Curmi, Ray Galea, Edward Bonavia); 1 2nd cy ♂ at Buskett on 03–04.10.22 (Edward Bonavia, Caldon Mercieca, Benjamin Metzeger).

Red Kite *Milvus milvus*
1 at Buskett on 01.10.18 (Edward Bonavia, Ray Galea); 1 at Buskett on 03.11.20 (Ray Galea); 1 juv. at Buskett and Dwejra (M) on 03.10.22 (Edward Bonavia, Caldon Mercieca, Charles Coleiro); 1 juv. at Buskett on 06.10.22 (Benjamin Metzeger).

Blue-cheeked Bee-eater *Merops persicus*
2 at Luqa Airport on 01.05.18 (James Aquilina); 1 at l/o Siġġiewi

on 06.05.18 (photos and info obtained from public FB group); 1 at Għarb on 01.05.22 (reported by Adin Vella).

Sooty Falcon *Falco concolor*
1 2nd cy at Buskett on 13.09.22 (Patrick Spiteri in public FB group).

Great Grey Shrike *Lanius excubitor elegans*
1 at Qbajjar on 21-22.03.21 (Gabby Micallef, Gilbert Haber, Benjamin Grech, Adin Vella, Steve Zammit Lupi, Edward Bonavia).

Carrion (Hooded) Crow *Corvus corone cornix*
1 at Mġarr Ix-Xini on 24.04.18 (Adin Vella); 1 at Rdum Tal-Madonna on 01.05.18 (James Crymble, Martin Austad); 1 at Marsaskala on 03-04.05.18 (Adin Vella); 1 at Ċirkewwa on 16.03.19 (Ray Galea, Nicholas Galea, Charles Coleiro); 2 at Xagħra l-Ħamra on 28.03.19 (Alex Casha); 1 at Dwejra (M) on 17.04.21 (Aron Tanti, Charles Coleiro); 1 at Marsaskala on 25.05.21 (Oliver P. Pace in BITMI FB group).

African Blue Tit *Cyanistes teneriffae*
1 caught 1908 (Despott 1917) (1st record for Malta)

Greater Hoopoe-lark *Alaemon alaudipes*
1 at L-Aħrax on 22–25.04.22 (Martin Austad, Raphael Soler, Steve Zammit Lupi, Aron Tanti, Ray Galea, Adin Vella, Anne Marie Austad, Benjamin Metzeger, Edward Bonavia, Hannah Greetham, Chris Carbone, Joseph M. Mangion, Mark Bonello, Alex Casha, Stephen Cilia, Norman Bonavia, Stefano Miceli).

Mediterranean Short-toed Lark *Alaudala rufescens*
1 at Xagħra L-Ħamra from 27.03.20 to 01.04.20 (Ian Balzan, Edward Bonavia, Stefan Azzopardi, Charles Coleiro, Ray Galea, Nicholas Galea, Caldon Mercieca, Alex Casha et al.).

Temminck's Lark *Eremophila bilopha*
1 at Ħal Far on 23–24.04.21 (Raphael Soler, Steve Zammit Lupi, Edward Bonavia, Ray Galea, Aron Tanti, Chris Carbone, Luke Vella, Ian Balzan, Joseph M. Mangion, Adin Vella, Stephen Cilia, Mark Sultana, Charles Coleiro, Martin Austad, John J. Borg, Benjamin Metzger, Norman Bonavia et al.).

Crested Lark *Galerida cristata*
1 at l/o Salib Tal-Għolja spring of 2018 (photographs posted on 01.05.18 and info obtained from public FB group).

Olivaceous Warbler *Iduna pallida*
1 (ssp. *pallida*) ringed at Kemmuna on 24.04.19 and retrapped on 28.04.19 (Nicholas Galea, Adin Vella, Steve Zammit Lupi, James Aquilina, Ray Galea); 1 (ssp. *reiseri*) ringed at Għadira on 06.06.20 (Ray Galea, Nicholas Galea, John J. Borg, Edward Bonavia); 1 ringed at Għadira on 16.05.21 (Ray Galea, Denis Cachia, Nicholas Galea, Edward Bonavia, Stefan Azzopardi, Raphael Soler); 1 at Kemmuna on 22–27.04.22 (Aron Tanti, Mark Bonello, Chris Carbone, Daniel Bonnici, Joseph M. Mangion, Stefano Miceli, Nicholas Galea, Edward Bonavia, Raphael Soler, Steve Zammit Lupi).

Isabelline Warbler *Iduna opaca*
1 ringed at Simar on 14.06.18 (Charles Coleiro); 1 ringed at Simar on 24.05.19 (Charles Coleiro, Edward Bonavia); 1 ringed at Kemmuna on 14.05.20 (Victor Cilia); 1 ringed at Għadira on 17.05.20 (Ray Galea, Denis Cachia); 1 ringed at Kemmuna on 29.04.21 (Nicholas Galea, Ray Galea, Victor Cilia, Steve Zammit Lupi); 1 ringed at Simar on 07.05.21 (Charles Coleiro); 1 ringed at Simar on 31.05.21 (Charles Coleiro).

Melodious Warbler *Hippolais polyglotta*
1 ringed at Mistra on 19.04.18 (Martin Austad, Nicholas Galea); 1 ringed at Kemmuna on 18.10.18 (Nicholas Galea, Stefan Azzopardi); 1 ringed at Manikata on 15.05.22 (Jean Paul Farrugia).

Blyth's Reed Warbler *Acrocephalus dumetorum*
1 ringed at Għadira on 15.09.18 (Ray Galea, Nicholas Galea, Edward Bonavia et al); 1 ringed at Mġarr Ix-Xini on 01.09.19, still present on 02.09.19 (Adin Vella).

Common Grasshopper-warbler *Locustella naevia*
1 ringed at Buskett on 20.09.19 (John Attard Montalto); 1 ringed at Għadira on 26.08.21 (David Attard, Charles Gauci); 1 ringed at Mtaħleb on 02.09.21 (Glenn Micallef); 1 ringed at Għadira on 04.09.21 (Ray Galea, Charles Gauci, Victor Cilia, Aron Tanti); 1 ringed at Buskett on 07.09.21 (John Attard Montalto).

Pale Rock Martin *Ptyonoprogne rupestris*
1 at Qammieħ from 23.11.20 to 01.12.20 (Denis Cachia, Edward Bonavia, Nicholas Galea, Raphael Soler, Ray Galea, Caldon Mercieca, John J. Borg, Aron Tanti, Charles Coleiro, Benjamin Metzger et al.) (1st record for Malta).

Hume's Leaf-warbler *Phylloscopus humei*
1 ringed at Salina on 08.11.20 (Mario V. Gauci, Stefano Miceli) (1st record for Malta).

Pallas's Leaf-warbler *Phylloscopus proregulus*
1 at Filfla on 24.04.18 (James Crymble, Michal Wolowik, Paulo Lago Barreiro, Hannah Greetham); 1 ringed at Kemmuna on 29.10.22, present till 02.11.22 (Nicholas Galea, Stefan Azzopardi, Mark Bonello, Edward Bonavia, Mario Mizzi, Ray Galea, Ian Balzan, Chris Carbone, Gilbert Haber, Aron Tanti).

Dusky Warbler *Phylloscopus fuscatus*
1 ringed at Għadira on 07.11.21 (Ray Galea, Ian Balzan, Denis Cachia, Alex Casha).

Radde's Warbler *Phylloscopus schwarzi*
1 ringed at Kemmuna on 20.10.20 (Nicholas Galea, Stefano Miceli, Steve Zammit Lupi, Ray Galea, Edward Bonavia).

African/Asian Desert Warbler *Curruca deserti/nana*
1 between Wied il-Mielaħ and Qbajjar on 01.11.21 (reported by Adin Vella).

Barred Warbler *Curruca nisoria*
1 ringed at Kemmuna on 30.04.22 (Nicholas Galea, Stefan Azzopardi, Anne Marie Austad, Edward Bonavia, Steve Zammit Lupi, Mark Bonello).

Western Orphean Warbler *Sylvia hortensis*
1 ringed at Kemmuna on 26.04.18, still present on 27th (Nicholas Galea).

Moltoni's Warbler *Sylvia subalpina*
1 at Buskett on 29.09.19 and 02.10.19 (Nicholas Galea, Ray Galea, Daniel Bonnici, Edward Bonavia); 1♂ ringed at Għadira on 19.04.20 (Ray Galea, Denis Cachia); 1 at Chadwick Lakes from 05–10.09.20 (Stefano Miceli, Edward Bonavia); 1♂ at Ġnien l-Għarusa tal-Mosta on 03–05.04.22 (Martin Austad, Raphael Soler, Edward Bonavia, Aron Tanti, Benjamin Metzeger); 1♂ ringed at Kemmuna on 24.04.22 (Nicholas Galea, Ray Galea, Edward Bonavia, Stefano Miceli, Chris Carbone, Joseph M. Mangion, Mark Bonello, Raphael Soler); 1 at Għadira on 21–25.09.22 (Nicholas Galea, Aron Tanti, Ray Galea, Daniel Bonnici, Denis Cachia).

Rüppell's Warbler *Sylvia ruppeli*
1♂ at Qammieħ on 19–20.03.20 (Caldon Mercieca, Nicholas Galea, Ray Galea, Noel Camilleri, Edward Bonavia, Norman Bonavia, James Crymble, Adin Vella, Charles Coleiro et al); 1♂ at Ġebel Ciantar on 28–29.03.20 (Emanuel Curmi, Michael Sammut in public FB page); 1♂ at Għar Lapsi from 30.03 to 03.04.20 (Steve Zammit Lupi, Edward Bonavia, Stefan Azzopardi, Luke Vella); 1♂ at Xrobb L-Għaġin on 19.03.21 (James Aquilina); 1♀ ringed at Kemmuna on 17.04.21, still present on 18th (Nicholas Galea, Gilbert Haber, Stefano Miceli); 1♂ at Bombi Floriana on 21.03.22 (Nicholas Galea, Steve Zammit Lupi, Edward Bonavia, Adin Vella, Raphael Soler, Aron Tanti, Stephen Cilia, Stefano Miceli, Mark Bonello, Timmy Micallef); 1♂ at Għar Ħasan on 22.03.22 (Steve Zammit Lupi); 3 (2♂♂ 1♀) at Ħal Far on 22–26.03.22 (Aron Tanti, Stephen Cilia, Edward Bonavia, Chris Carbone, Caldon Mercieca, Ray Testa); 1♂ at Ras il-Ħamrija, Ħagar Qim on 22–27.03.22 (Steve Zammit Lupi, Stephen Cilia, Chris Carbone).

Marmora's Warbler *Curruca sarda*
1 at Ta' Ċenċ on 01–05.12.22 (Nicholas Galea, Edward Bonavia, Benjamin Metzger, Mark Bonello, Stefano Miceli, Gilbert Haber).

Northern Wren *Troglodytes troglodytes*
1 at Buskett on 04–12.02.22 (Benny Scerri, Steve Zammit Lupi, Edward Bonavia, Benjamin Metzger, Mark Bonello, Nicholas Galea, Stefan Azzopardi, Ray Galea, Chris Carbone, Joseph M. Mangion, Raphael Soler, Stefano Miceli, Alex Casha, Martin Austad, Stephen Cilia, Aron Tanti, Caldon Mercieca, John J. Borg); 2 at Manoel Island from 11.02.22 to 11.03.22 (Benjamin Metzger, Marie-Claire Gatt, Aron Tanti, Edward Bonavia).

Spotless Starling *Sturnus unicolor*
1 ad. ♀ ringed with brood patch at Kemmuna on 19.04.19 (Martin Austad, Ray Galea, Nicholas Galea, Anne Marie Austad) and observed on 19.05.19 and confirmed breeding with Common Starling *Sturnus vulgaris* (Edward Bonavia, Ray Galea, Nicholas Galea, Daniel Bonnici); 2 at Kemmuna on 21.02.21 (Martin Austad, Ray Galea, Nicholas Galea, Rapahel Soler) (1 of which was the 2019 accepted bird).

Eyebrowed Thrush *Turdus obscurus*
1 shot in Malta on 16.10.19 (Natalino Fenech in *Dutch Birding*); 1♀ ringed at Kemmuna on 19.04.22 (Martin Austad, Benjamin Metzger, Ray Galea, Anne Marie Austad, Hannah Greetham, Ian Balzan, Raphael Soler).

Common Redstart *Phoenicurus phoenicurus samamisicus*
1 ringed at Għadira on 18.04.20 (Ray Galea).

Moussier's Redstart *Phoenicurus moussieri*
1 (1st cy ♀) ringed at Kemmuna on 23.10.19 (Nicholas Galea, Stefan Azzopardi, Raphael Soler); 1♀ at Ta' Ċenċfrom 29.11.19 till at least 10.01.20 (Nicholas Galea, James Crymble, Edward Bonavia, Ray Galea, Caldon Mercieca, Denis Cachia, Aron Tanti, Stefan Azzopardi, Hannah Greetham et al.); 1 ♀ ringed at Kemmuna on 19.10.20 (Nicholas Galea, Stefano Miceli, Ray Galea, Steve Zammit Lupi, Chris Carbone); 1♂ ringed at Għadira on 31.10.20 (Ray Galea, Charles Gauci); 1 ♂ trapped at Xagħra in Oct 2020 (reported by Raphael Soler); 1♂ at Xagħra l-Ħamra on 20.10.21 (Cassandra Borg Muscat).

Desert Wheatear *Oenanthe deserti*
1♂ at Ta' Ċenċ on 12.03.18 (photos and info obtained from public FB page); 1♂ at Xagħra l-Ħamra on 26.03.22 (Nicholas Galea, Chris Carbone, Nimrod Mifsud, Mark Bonello, Benjamin Metzger, Raphael Soler).

White-crowned Wheatear *Oenanthe leucopyga*
1 2nd yr at Dwejra (G) on 15–20.04.21 (Roland Vella, Adin Vella, Edward Bonavia, Mark Sultana, Benjamin Grech, Steve Zammit Lupi, Aron Tanti, Ray Galea, Stefan Azzopardi, Chris Carbone, Gilbert Haber et al.); 1 2nd yr at Ħal Far on 22–23.04.21 (David Bugeja, Edward Bonavia, Ray Galea, Adin Vella, Steve Zammit Lupi, Rapahel Soler, Stephen Cilia, Charles Coleiro, Joseph M. Mangion, Aron Tanti, Denis Cachia, Caldon Mercieca, Ian Balzan, Stefano Miceli et al.).

Olive-backed Pipit *Anthus hodgsoni*
1 ringed at Buskett on 02.11.19 (John Attard Montalto); 2 (1 ringed) at Buskett on 17–18.11.19 (Nicholas Galea, Daniel Bonnici, Edward Bonavia, Ray Galea, Raphael Soler, Adin Vella); 5 at Ta' Qali from 19.11.19 till at least 07.01.20 (Chris Carbone, Daniel Bonnici, Edward Bonavia, Charles Coleiro, Ray Galea, Caldon Mercieca, John J. Borg, Denis Cachia, Aron Tanti et al.); 2 at Buskett from 05.01.20 till at least 10.01.20 (Stefano Miceli, Nicholas Galea, Daniel Bonnici, Edward Bonavia); 3 at Ta' Qali from 20.10.20 till at least 21.01.21 (John J. Borg, Aron Tanti, Caldon Mercieca, Edward Bonavia, Chris Carbone, Steve Zammit Lupi, Nicholas Galea, Benjamin Metzger, Denis Cachia et al.); 1 ringed at Salina on 01.11.20 (Mario V. Gauci); 1 at Buskett on 22.12.20 (Stefano Miceli); 2 at Buskett on 31.01.21 (Stefano Miceli) (1 still present on 07.02.21); 1 at Wied Għollieqa from 01.12.21 till at least 17.01.22 (Benjamin Metzger, Raphael Soler); 4 at Ta' Qali from 18.12.21 till at least 06.01.22 (Stefano Miceli, Aron Tanti, Stephen Cilia, Steve Zammit Lupi, Edward Bonavia); 2 at Buskett on 24.03.22 (Nicholas Galea, Mark Bonello); 1 ringed at Mtaħleb on 31.10.22 (Glenn Micallef); 2 at Ta' Qali from 07.11.22 till at least 01.01.23 (Benjamin Metzger, Edward Bonavia, Nicholas Galea, Aron Tanti, Timmy Micallef, Stefano Miceli).

Citrine Wagtail *Motacilla citreola*
1 ad. ♂ at Burmarrad on 26–27.04.19 (James Crymble, Hannah Greetham, Edward Bonavia, Ray Galea, Caldon Mercieca, Steve Zammit Lupi et al.); 1 ad. at Il-Magħluq ta' Marsaskala on 24.04.21 (Benny Scerri in public FB group); 1 juv. at Burmarrad on 24–25.09.22 (Stefano Miceli, Aron Tanti, Edward Bonavia, Adin Vella, Ray Galea, Raphael Soler, Stefan Azzopardi, Nicholas Galea, Alex Casha, Chris Carbone, Daniel Bonnici, Denis Cachia).

Eastern Yellow Wagtail *Motacilla tschutschensis*
1 at Smart City from 26.10.16 to 08.12.16 (Richard Cachia Zammit, Stefano Miceli, Chris Carbone, Edward Bonavia) (1st record for Malta); 1 at Salina from 21.12.19 to 04.01.20 (Patrick Spiteri, Stefano Miceli, Nicholas Galea, Daniel Bonnici, Ray Galea, Edward Bonavia, Caldon Mercieca, Charles Coleiro, Aron Tanti, Mario V. Gauci, Denis Cachia et al.); 1 at Salina from 24.10.20 till at least 14.12.20 (Aron Tanti, Edward Bonavia, John Attard Montalto, Ray Galea, Caldon Mercieca, Mario V. Gauci, Manuel Mallia et al.); 1 at Bidnija on 22–29.01.22 (Raphael Soler, Martin Austad, Adin Vella, Aron Tanti, Ray Galea, Nicholas Galea, Stefan Azzopardi, Edward Bonavia, Stefano Miceli, Steve Zammit Lupi, Benjamin Metzger, Hannah Greetham et al.); 1 at Il-Magħluq ta' Marsaxlokk on 04–20.12.22 (Richie Sullivan, Aron Tanti, Edward Bonavia, Stephen Cilia, Nicholas Galea, Mark Bonello, Stefan Azzopardi, Timmy Micallef, James Aquilina).

Common Rosefinch *Carpodacus erythrinus*
1 at Mġarr Ix-Xini on 09.10.13 (Adin Vella); 1 at Għadira on 10.10.17 (David Attard); 1 ringed at Għadira on 19.09.18 (David Attard, Alvin Farrugia, Charles Gauci, Gilbert Haber); 1 at Wied il-Għasel on 17.10.21 (Charles Gauci); 1 trapped at Xagħra on 03.11.21 (reported by Adin Vella).

Mongolian Finch *Bucanetes mongolicus*
1 1st yr ♂ trapped at Miġra l-Ferħa on 15.11.13 (Natalino Fenech in *Dutch Birding*) (1st record for Malta).

Snow Bunting *Plectrophenax nivalis*
1♂ at Ġebel Ciantar on 08–09.12.19 (photos and info from public FB group); 1 (1st winter ♂) at Il-Qaws on 30–31.12.19 (Nicholas Galea, Stefan Azzopardi, Daniel Bonnici, Edward Bonavia, Ray Galea, Aron Tanti); 1 trapped at Sanap Cliffs on 18.11.21 (reported by Adin Vella).

Cirl Bunting *Emberiza cirlus*
1 trapped at Għargħur on 22.10.21 (reported by Adin Vella).

Yellowhammer *Emberiza citrinella*
1 at Ċirkewwa on 23.03.19 (Ray Galea, Nicholas Galea, Charles Coleiro, Edward Bonavia).

Rustic Bunting *Emberiza rustica*
1 ringed at Għadira on 29.09.18 (Ray Galea, Nicholas Galea, Edward Bonavia et al.); 1 ringed at Kemmuna on 23.10.19 (Nicholas Galea, Stefan Azzopardi, Raphael Soler).

Little Bunting *Emberiza pusilla*
1 trapped at Kerċem on 06.11.18 (reported by Adin Vella); 1 at Għajn Riħana on 03.11.20 (Aron Tanti); 1 ringed at Salina on 14.10.21 (Mario V. Gauci); 1 trapped at Għarb on 10.10.22 (reported by Adin Vella); 1 ringed at Mtaħleb on 30.10.22 (Glenn Micallef).

Unknown origin Records

The following records were accepted but were placed under birds of unknown origin due to the possibility of them being escapees from captivity.

Marbled Teal *Marmaronetta angustirostris*
3 at L-Aħrax on 04.07.21 (Mario Galea in public FB group); 1 at Għadira on 04.07.21 (Ray Galea, Denis Cachia) with ring from EU Life project (bird released in May 2021 in Longarini, SE Sicily. On 05.07.21 it was back at Longarini); 1 found exhausted at Żebbuġ on 12.07.21 (Nicholas Barbara), released at Simar the following day; 1 ringed at Għadira on 25.07.21 (Ray Galea).

Tufted Duck *Aythya fuligula*
1♀ shot at Marsalforn Valley on 28.11.20 (reported by Adin Vella); 1♀ at Simar on 22.06.21 (Charles Coleiro, Mark Gauci, Dominic Frendo).

Laughing Dove *Spilopelia senegalensis*
1 trapped and released at Lunzjata (G) on 03.10.20 (reported by Adin Vella).

Common Barn-owl *Tyto alba*
1 at Wied l-Għomor on 21.04.18 (Adin Vella)

Eurasian Jackdaw *Corvus monedula*
1 at l/o Siġġiewi on 24.04.18 (photos and info from public FB group).

Great Tit *Parus major*
1 trapped at Bengħisa in mid-Oct 2020 (reported by James Aquilina).

Rejected Records

The following records were discussed at MRRC meetings and rejected as they were not felt to have had sufficient evidence to be accepted under AERC and MRRC criteria. In some cases, submissions with descriptions were sent to experts abroad for their comment before a final decision was taken. Submitters and reasons for refusals are not included in this report.

Greylag Goose *Anser anser*
1 at Qawra on 09.12.21

Rock Dove *Columba livia*
1 at Qawra on 01.09.22

Red Knot *Calidris canutus*
24 at Qawra on 11.09.22

American Kestrel *Falco sparverius*
1 at l/o Dingli on 20.10.22

Sykes's Warbler *Iduna rama*
1 at Żebbuġ (M) from 02–05.10.20

Olivaceous Warbler *Iduna pallida*
1 at Mosta Valley on 29.09.22

Isabelline Warbler *Iduna opaca*
1 ringed at Salina on 06.05.18

Paddyfield Warbler *Acrocephalus agricola*
1 at Wied is-Sewda, Qormi on 28.10.21

Thrush Nightingale *Luscinia luscinia*
1 ringed at Kemmuna on 24.04.19

Common Rosefinch *Carpodacus erythrinus*
1 at Xagħra l-Ħamra on 16.11.19

Records in the public domain

As mentioned in previous rarities reports, during this review period, a number of rarities have been in the public domain either in the press, online or in birding journals. The following records were discussed and rejected

Barnacle Goose *Branta leucopsis*
5 at Delimara on 13.12.19; 1 at Pembroke on 14.12.19 (NF, MS in *Gli Uccelli d'Italia*)
Hearsay records with no photographic evidence or description and never officially submitted to the MRRC, for which reasons these records were rejected.

Oriental Turtle-dove *Streptopelia orientalis*
1 shot at Bengħisa on 01.11.13 (NF & MS in *Gli Uccelli d'Italia*)
Hearsay record with no photographic evidence or description and never officially submitted to the MRRC, for which reasons this record was rejected.

Common Nighthawk *Chordeiles minor*
1 freshly killed at Ħal Għaxaq on 27.10.18 (reported by NF published in *Dutch Birding* Vol 40 No 6 in WP report, and again by NF & MS in *Gli Uccelli d'Italia*).
Although a photo of the dead bird was published in the paper, the MRRC could not eliminate the possibility of this bird being directly imported from North America thus creating doubts on the origin of this bird. Additionally this record was never officially submitted to the MRRC. This record was therefore rejected.

Northern Bald Ibis *Geronticus eremita*
1 at Ta' Qali from 15–18.10.17 (NF & MS in *Gli Uccelli d'Italia*)
This bird was also observed by many other local birders including MRRC members; the bird originated from the released captive birds at Oasi Dei Quadris Fagagna in Italy. Since this is not a self-sustaining population this record could not be included in the official Malta bird list.

Levant Sparrowhawk *Accipiter brevipes*
3 (2 +1) at Ġebel Ciantar on 11.10.20 (MS et al.).
After analysing the photos, the MRRC decided that the bird in all photos matched the bird seen at Buskett, so only 1 bird was accepted.

Amur Falcon *Falco amurensis*
1♀ at Fawwara on 19.11.16 (NF & MS in *Gli Uccelli d'Italia*)
Hearsay record with no photographic evidence or description and never officially submitted to the MRRC, for which reasons this record was rejected.

Isabelline Shrike *Lanius isabellinus*
1♂ at Nadur (G) on 23.04.20 (NF & MS in *Gli Uccelli d'Italia*)

Hearsay record with no photographic evidence or description and never officially submitted to the MRRC, for which reasons this record was rejected.

Eurasian Magpie *Pica pica*

1 at Mellieħa on 17.05.17; 1 at Marsa on 09.11.19 (NF & MS in *Gli Uccelli d'Italia*)

Hearsay records with no photographic evidence or description and never officially submitted to the MRRC, for which reasons these records were rejected.

Thick-billed Lark *Rhanphocoris clotbey*

1 shot at Għajn Tuffieħa in Oct 1980 found in a local collection (first record published in NF's books).

Hearsay record and never officially submitted to the MRRC. Even if this species was seen in a local collection it could have easily been imported from North Africa. For these reasons this record was rejected.

Eastern Orphean Warbler *Sylvia crassirostris*

1 in 1843 (Schembri); 1 in 1858 (Wright) (claimed as first records in NF's books); 1 at Dingli Cliffs on 31.05.15 (NF & MS in *Gli Uccelli d'Italia*).

Schembri (1843) lists *Sylvia orphea* as not very common: nevertheless every year they migrate in Mar and re-pass in Sep and Oct. Wright listed it as *Sylvia orphea*. "Appears to be rare; I have only seen a single specimen - one sent in 1858 to Sir W. Jardine by his son, who was serving in one of Her Majesty's ships on the station." Thus there is no mention of this species (at that time Eastern subspecies) in both Schembri and Wright. As for the 2015 record, it is a hearsay record with no photographic evidence or description and never officially submitted to the MRRC, for which reasons this record was rejected.

White's Thrush *Zoothera aurea*

1 freshly killed at Fawwara on 25.10.18 (reported by NF published in *Dutch Birding* Vol 40 No 6 in WP report); 1 shot in Malta on 05.11.20 (NF in *Dutch Birding*).

Hearsay records with no photographic evidence or description and never officially submitted to the MRRC, for which reasons these records were rejected.

Eyebrowed Thrush *Turdus obscurus*

1 shot in Malta on 10.10.20 (NF in *Dutch Birding*).

Hearsay records with no photographic evidence or description and never officially submitted to the MRRC, for which reasons these records were rejected.

Dusky Thrush *Turdus eunomus*

1 shot at Dwejra (G) on 05.11.17 (NF & MS in *Gli Uccelli d'Italia*)

Hearsay record and never officially submitted to the MRRC. Even if stuffed bird is found in a local collection as stated it could have easily been imported. In view of this, this record was rejected.

Siberian/Eastern Stonechat *Saxicola torquatus maurus*

1♀ at Dingli Cliffs on 04.11.18 (NF & MS in *Gli Uccelli d'Italia*)

Hearsay record with no photographic evidence or description and never officially submitted to the MRRC, for which reasons this record was rejected.

Black Wheatear *Oenanthe leucura*

1 on 10.04.20 (MS & NF)

Photo of the bird uploaded by NF on *Bird Guides* website showed that photo was taken much before in the past and most probably abroad. In view of this, this record was rejected.

Eastern Yellow Wagtail *Motacilla tschutschensis*

"Two adult males belonging to the races *M flava xanthophyrs* and *M flava tschutschensis*, both taken locally, have been identified by the author in March 2005 in the collection of Lorry Attard of Sta Venera. Attard did not keep the date of capture of any of the specimens." (published in NF's books).

Hearsay records with no photographic evidence or description and never officially submitted to the MRRC, for which reasons these records were rejected.

Chestnut-shouldered Bush-sparrow (Yellow-throated Sparrow) *Gymnoris xanthocollis*

1 trapped at Mtaħleb on 26.10.17(NF & MS in *Gli Uccelli d'Italia*)

Hearsay record with no photographic evidence or description and never officially submitted to the MRRC, for which reasons this record was rejected.

White-throated Sparrow *Zonotrichia albicollis*

1 trapped close to Marsaxlokk in Oct 1995.

Since this record was never officially submitted to the MRRC and there are no further details of this record, this record was rejected.

Since the MRRC criteria are based on objective verification and publicly accessible and verifiable evidence, it is important to note that should the MRRC receive more details and information on any of the above rejected records they will be discussed again.

Records reassessed

The following two records were reassessed

Baikal Teal *Sibirionetta formosa*

3 at St George's Bay, Birżebbuġa on 16.04.1912 (Despott)

This record had been rejected in a past MRRC meeting due to the fact that other European Rarities Committees had rejected all their records of this species due to the possibility of them being escapees. In the past few years many Rarities Commitees have started to include this species in their official lists, some involving historical records. In view of these recent developments it was decided that Baikal Teal will be added again to the official Malta Bird List.

Greenish Warbler *Phylloscopus trochiloides*

1 ringed at Għadira on 09.12.02 (Charles Gauci)

At the time, the MRRC had sent CG's description of this bird to Lars Svensson and in his reply he had stated that the bird could also have been a Two-barred Warbler *Phylloscopus plumbeitarsus*. In 2002, Two-barred Warbler was still a subspecies of Greenish Warbler but is now recognised as a full species and separate from Greenish. It was therefore decided that this record should be listed as Greenish/Two-barred Warbler Phylloscopus *trochiloides/ plumbeitarsus*. Due to this Greenish Warbler was deleted from the official Malta Bird List.

Pending Records

As at 31.12.2022 there were no pending submitted records to be discussed.

Acknowledgements

I would like to thank all local and foreign birdwatchers who submitted records with descriptions and photos to the MRRC. I would also like to thank MRRC Chairman Raymond Galea and all the other Committee members for examining in detail all submissions and for all the interesting discussions and comments that followed. I would also like to thank the following international experts for their views on a number of records: Amir Ben Dov, Patrick Bergier, Oscar Campbell, Robert Flood, Dick Forsman, Magnus Hellstrom, Klaus Malling Olsen, Bjorn Malmhagen, Tor Olsen, Magnus Robb, Hadoram Shirihai, Lars Svensson, and Noam Weiss.

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Ringing Report for 2019–2022

Nicholas Galea

This report covers the ringing activity done by the BirdLife Malta Ringing Scheme in the 4-year period from 2019 to 2022. In this period the scheme had a maximum of 29 licensed ringers, namely: James Aquilina, David Attard, John Attard Montalto, Martin Austad, John J. Borg, Denis Cachia, Victor Cilia, Charles Coleiro, James Crymble, Jean Paul Farrugia, Nicholas Galea, Raymond Galea, Marie Claire Gatt, Charles Gauci, Mario V. Gauci, Mark Gauci, John Grech, Hannah Greetham, Gilbert Haber, Manuel Mallia, Joseph M. Mangion, Rita Matos, Benjamin Metzger, Glenn Micallef, Timothy Micallef, Stefano Miceli, Alice Tribe and Adin Vella.

In September 2020 the scheme lost one of its ringers when ringer Patrick Sammut passed away. BirdLife Malta will always be thankful to Patrick's contribution as part of the ringing scheme.

Ringing Totals

A total of 90,492 of 164 species were ringed in these four years, with 2021 being the year with most numbers ringed, totalling 25,941. This was the highest total for a single year since 2013 (in 2013 more than 28,000 birds were ringed). The running total of birds ringed in Malta until the end of 2022 now stands at 706,707 (Fig. 1), with 2022 surpassing the landmark 700,000.

Seven new additions to the ringing list were made in this 4-year period, namely:
Great Cormorant (1 bird rehabbed by BirdLife Malta and ringed before release in 2021)
Marbled Teal (1 bird ringed at Għadira NR and another at Simar NR in Jul 2021, both birds of unknown origin)
Eleonora's Falcon (1 bird rehabbed by BirdLife Malta and ringed before release in 2021)
Alpine Swift (1 bird rehabbed by BirdLife Malta and ringed before release in 2019)
Eyebrowed Thrush (1 bird ringed at the Kemmuna Bird Observatory in Apr 2022)
Hume's Leaf Warbler (1 bird ringed at Salina NR in Nov 2020, the first record of this species for Malta)
Spotless Starling (1 bird ringed at the Kemmuna Bird Observatory in Apr 2019).

Other noteworthy species ringed in this period include the 5th ever **Baillon's Crake** (stranded bird), the 7th **Ruddy Turnstone** at Għadira NR in Aug 2020, the 2nd ever **Great Spotted Cuckoo** at Kemmuna Bird Observatory in Apr 2022, the 2nd, 3rd and 4th **Northern Long-eared Owls**, a total of 37 **Short-eared Owls**, 4 **Olive-backed Pipits** (2 in 2019, 1 in 2020, 1 in 2022), 1 **Water Pipit** in 2019, 2 **Northern Wrens** in 2022, 1 **Rufous-tailed Scrub-robin** in 2020, 3 **Moussier's Redstarts** (1 in 2019, 2 in 2020), 5 **Common Grasshopper-warblers** (1 in 2019 and a remarkable 4 in 2021, marking a 40% increase with only 12 previously ringed), the 5th ever **Blyth's Reed-warbler** in 2019, 3 **Olivaceous Warblers** and 6 **Isabelline Warblers**, the 11th ever **Melodious Warbler**, 2 **Moltoni's Warblers** (1 in 2020, 1 in 2022 – 3rd and 4th ringing records), 1 **Rüppell's Warbler** in 2021, only the 3rd ever ringed, 1 **Barred Warbler** in 2022, only the 4th record, 1 **Pallas's Leaf-warbler** in Oct 2022 (the 4th ringed), 1 **Radde's Warbler** in Oct 2020 (the 3rd record), the 10th ever **Dusky Warbler** at Għadira NR in 2021, 1 **Rustic Bunting** in Oct 2019 (21st ringing record), and 2 **Little Buntings** (1 in 2021, 1 in 2022, bringing total to 19 birds ringed).

A good number of birds ringed, especially larger non-passerine species were ringed following successful rehabilitation and before release after these birds were either found stranded, sick, shot or confiscated. These include all herons (except 2 Little Bittern: 1 at Kemmuna in 2019 and 1 at Simar in 2020), Greater Flamingos, a good number of wader species, most gulls, the single Black Tern, and most raptors. Exceptions to the latter group include a Merlin ringed in Oct 2020 at Mġarr ix-Xini, 1 Eurasian Sparrowhawk in Sep 2022 at Għadira NR and 5 Common Kestrels, all on Kemmuna in spring (4 in 2021, 1 in 2022). A good portion of finches ringed were also confiscated birds.

The 10 most commonly ringed birds in this 4-year period (in order starting with most common) were **European Robin** (13,051), **Common Chiffchaff** (9,397), **European Storm-petrel** (8,928), **Garden Warbler** (7,481), **Wood Warbler** (5,342), **Barn Swallow** (4,687), **Eurasian Blackcap** (4,448), **Spanish Sparrow** (4,069), **Common Whitethroat** (3,858) and **Willow Warbler** (2,492).

EURING number	species	1965 to 2018	2019	2020	2021	2022	Total 1965 to 2022
00070	**Little Grebe** *Tachybaptus ruficollis*	3	0	0	0	0	3
00090	**Great Crested Grebe** *Podiceps cristatus*	1	0	0	0	0	1
00120	**Black-necked Grebe** *Podiceps nigricollis*	34	1	0	0	0	35
00360	**Scopoli's Shearwater** *Calonectris diomedea*	3704	147	101	147	46	4145
00460	**Manx Shearwater** *Puffinus puffinus*	1	0	0	0	0	1
00462	**Yelkouan Shearwater** *Puffinus yelkouan*	2759	370	320	290	224	3963
00520	**European Storm-petrel** *Hydrobates pelagicus*	32326	3519	829	3875	705	41254
00720	**Great Cormorant** *Phalacrocorax carbo*	0	0	0	1	0	1
00950	**Eurasian Bittern** *Botaurus stellaris*	4	0	0	0	0	4
00980	**Common Little Bittern** *Ixobrychus minutus*	135	3	4	5	4	151
01040	**Black-crowned Night-heron** *Nycticorax nycticorax*	25	0	2	1	0	28
01080	**Squacco Heron** *Ardeola ralloides*	5	0	0	0	0	5
01110	**Cattle Egret** *Bubulcus ibis*	2	1	0	0	0	3
01190	**Little Egret** *Egretta garzetta*	6	1	0	0	1	8
01220	**Grey Heron** *Ardea cinerea*	3	0	0	0	0	3
01240	**Purple Heron** *Ardea purpurea*	1	0	1	0	1	3
01440	**Eurasian Spoonbill** *Platalea leucorodia*	1	0	0	0	0	1
01470	**Greater Flamingo** *Phoenicopterus roseus*	7	2	3	1	1	14
01790	**Eurasian Wigeon** *Mareca penelope*	1	0	0	0	0	1
01840	**Common Teal** *Anas crecca*	1	0	0	0	0	1
01860	**Mallard** *Anas platyrhynchos*	5	0	0	0	0	5
01890	**Northern Pintail** *Anas acuta*	1	0	0	0	0	1
01910	**Garganey** *Spatula querquedula*	2	0	0	0	0	2
01950	**Marbled Teal** *Marmaronetta angustirostris*	0	0	0	2	0	2
02310	**European Honey-buzzard** *Pernis apivorus*	7	5	7	3	1	23
02380	**Black Kite** *Milvus migrans*	2	0	1	1	0	4
02600	**Western Marsh-harrier** *Circus aeruginosus*	12	3	6	7	0	28
02620	**Pallid Harrier** *Circus macrourus*	2	0	0	1	0	3
02630	**Montagu's Harrier** *Circus pygargus*	2	2	0	2	0	6
02690	**Eurasian Sparrowhawk** *Accipiter nisus*	5	0	0	0	3	8
03030	**Lesser Kestrel** *Falco naumanni*	2	0	1	0	0	3
03040	**Common Kestrel** *Falco tinnunculus*	86	8	9	29	4	136
03090	**Merlin** *Falco columbarius*	2	1	1	0	0	4
03100	**Eurasian Hobby** *Falco subbuteo*	7	0	3	0	0	10
03110	**Eleonora's Falcon** *Falco eleonorae*	0	0	0	1	0	1
03550	**Chukar** *Alectoris chukar*	29	0	0	0	0	29
03700	**Common Quail** *Coturnix coturnix*	50	1	1	14	20	86
04070	**Western Water Rail** *Rallus aquaticus*	317	2	3	1	1	324
04080	**Spotted Crake** *Porzana porzana*	84	1	1	1	0	87
04100	**Little Crake** *Zapornia parva*	54	0	0	2	0	56
04110	**Baillon's Crake** *Zapornia pusilla*	4	0	1	0	0	5
04210	**Corncrake** *Crex crex*	1	0	0	0	0	1
04240	**Common Moorhen** *Gallinula chloropus*	654	3	4	3	0	664
04250	**Allen's Gallinule** *Porphyrio alleni*	1	0	0	0	0	1
04290	**Common Coot** *Fulica atra*	16	0	0	0	0	16
04550	**Black-winged Stilt** *Himantopus himantopus*	6	0	0	9	3	18
04590	**Eurasian Thick-knee** *Burhinus oedicnemus*	2	2	1	3	1	9
04690	**Little Ringed Plover** *Charadrius dubius*	426	7	17	14	24	488
04700	**Common Ringed Plover** *Charadrius hiaticula*	107	0	0	8	7	122
04770	**Kentish Plover** *Charadrius alexandrinus*	6	0	0	0	0	6

Fig. 1. Running totals per species since 1965, including totals by species of birds ringed annually for the period 2019–2022 *(continued overleaf)*

EURING number	species	1965 to 2018	2019	2020	2021	2022	Total 1965 to 2022
04820	**Eurasian Dotterel** *Eudromias morinellus*	10	0	0	2	0	12
04850	**Eurasian Golden Plover** *Pluvialis apricaria*	1	0	0	0	3	4
04860	**Grey Plover** *Pluvialis squatarola*	3	0	0	0	0	3
04930	**Northern Lapwing** *Vanellus vanellus*	1	0	0	0	0	1
05010	**Little Stint** *Calidris minuta*	3372	20	67	73	90	3622
05020	**Temminck's Stint** *Calidris temminckii*	96	0	2	2	3	103
05090	**Curlew Sandpiper** *Calidris ferruginea*	203	2	4	2	4	215
05120	**Dunlin** *Calidris alpina*	508	4	6	17	5	540
05140	**Broad-billed Sandpiper** *Calidris falcinellus*	2	0	0	0	0	2
05170	**Ruff** *Calidris pugnax*	100	0	0	0	0	100
05180	**Jack Snipe** *Lymnocryptes minimus*	35	0	0	0	0	35
05190	**Common Snipe** *Gallinago gallinago*	186	1	1	2	2	192
05200	**Great Snipe** *Gallinago media*	16	0	0	0	0	16
05290	**Eurasian Woodcock** *Scolopax rusticola*	18	0	0	0	0	18
05320	**Black-tailed Godwit** *Limosa limosa*	1	0	0	1	0	2
05340	**Bar-tailed Godwit** *Limosa lapponica*	1	0	0	0	0	1
05380	**Whimbrel** *Numenius phaeopus*	1	0	0	0	0	1
05450	**Spotted Redshank** *Tringa erythropus*	3	0	0	1	0	4
05460	**Common Redshank** *Tringa totanus*	59	0	1	1	2	63
05470	**Marsh Sandpiper** *Tringa stagnatilis*	3	0	0	0	0	3
05480	**Common Greenshank** *Tringa nebularia*	7	0	0	4	1	12
05530	**Green Sandpiper** *Tringa ochropus*	85	5	4	19	22	135
05540	**Wood Sandpiper** *Tringa glareola*	400	6	10	33	28	477
05560	**Common Sandpiper** *Actitis hypoleucos*	1404	82	90	65	84	1725
05610	**Ruddy Turnstone** *Arenaria interpres*	7	0	1	0	0	8
05750	**Mediterranean Gull** *Larus melanocephalus*	4	4	1	0	1	10
05820	**Black-headed Gull** *Larus ridibundus*	1	2	2	2	7	14
05850	**Slender-billed Gull** *Larus genei*	1	0	1	0	0	2
05880	**Audouin's Gull** *Larus audouinii*	1	0	0	0	0	1
05926	**Yellow-legged Gull** *Larus michahellis*	2434	82	72	19	132	2739
06110	**Sandwich Tern** *Thalasseus sandvicensis*	1	0	0	0	0	1
06270	**Black Tern** *Chlidonias niger*	1	0	0	0	1	2
06280	**White-winged Tern** *Chlidonias leucopterus*	1	0	0	0	0	1
06840	**Eurasian Collared-dove** *Streptopelia decaocto*	180	11	5	15	28	239
06870	**European Turtle-dove** *Streptopelia turtur*	426	18	10	21	9	484
06900	**Laughing Dove** *Spilopelia senegalensis*	1	0	0	0	0	1
07160	**Great Spotted Cuckoo** *Clamator glandarius*	1	0	0	0	1	2
07240	**Common Cuckoo** *Cuculus canorus*	126	1	2	6	3	138
07350	**Common Barn-owl** *Tyto alba*	2	0	0	0	0	2
07390	**Eurasian Scops-owl** *Otus scops*	595	13	27	32	23	690
07670	**Northern Long-eared Owl** *Asio otus*	1	0	0	2	1	4
07680	**Short-eared Owl** *Asio flammeus*	13	3	2	13	19	50
07780	**European Nightjar** *Caprimulgus europaeus*	620	43	55	46	111	875
07950	**Common Swift** *Apus apus*	791	290	229	221	157	1688
07960	**Pallid Swift** *Apus pallidus*	163	28	47	3	5	246
07980	**Alpine Swift** *Tachymarptis melba*	0	1	0	0	0	1
08310	**Common Kingfisher** *Alcedo atthis*	1051	56	57	32	41	1237
08400	**European Bee-eater** *Merops apiaster*	195	11	15	36	78	335
08410	**European Roller** *Coracias garrulus*	2	0	0	0	0	2
08460	**Common Hoopoe** *Upupa epops*	334	35	48	36	18	471
08480	**Eurasian Wryneck** *Jynx torquilla*	1632	28	52	38	49	1799

EURING number	species	1965 to 2018	2019	2020	2021	2022	Total 1965 to 2022
09680	**Greater Short-toed Lark** *Calandrella brachydactyla*	334	4	3	4	3	348
09740	**Woodlark** *Lullula arborea*	2	0	0	0	0	2
09760	**Eurasian Skylark** *Alauda arvensis*	289	16	23	26	4	358
09810	**Collared Sand Martin** *Riparia riparia*	13267	14	23	53	113	13470
09920	**Barn Swallow** *Hirundo rustica*	52860	932	1346	1492	917	57547
09950	**Red-rumped Swallow** *Cecropis daurica*	205	15	24	12	7	263
10010	**Northern House Martin** *Delichon urbicum*	11497	7	20	31	38	11593
10020	**Richard's Pipit** *Anthus richardi*	1	0	0	0	0	1
10050	**Tawny Pipit** *Anthus campestris*	31	2	2	1	0	36
10080	**Olive-backed Pipit** *Anthus hodgsoni*	11	2	1	0	1	15
10090	**Tree Pipit** *Anthus trivialis*	3570	182	572	888	554	5766
10110	**Meadow Pipit** *Anthus pratensis*	5391	139	542	511	440	7023
10120	**Red-throated Pipit** *Anthus cervinus*	84	0	0	1	5	90
10141	**Water Pipit** *Anthus spinoletta*	24	1	0	0	0	25
10142	**Rock Pipit** *Anthus petrosus*	2	0	0	0	0	2
10170	**Western Yellow Wagtail** *Motacilla flava*	6720	102	80	93	152	7147
10190	**Grey Wagtail** *Motacilla cinerea*	891	7	6	9	10	923
10200	**White Wagtail** *Motacilla alba*	2532	55	65	25	69	2746
10660	**Northern Wren** *Troglodytes troglodytes*	24	0	0	0	2	26
10840	**Dunnock** *Prunella modularis*	6868	164	134	406	397	7969
10950	**Rufous-tailed Scrub-robin** *Cercotrichas galactotes*	18	0	1	0	0	19
10990	**European Robin** *Erithacus rubecula*	94303	2201	3393	3810	3647	107354
11030	**Thrush Nightingale** *Luscinia luscinia*	5	0	0	0	0	5
11040	**Common Nightingale** *Luscinia megarhynchos*	3771	66	96	90	30	4053
11050	**Siberian Rubythroat** *Calliope calliope*	1	0	0	0	0	1
11060	**Bluethroat** *Cyanecula svecica*	238	2	8	8	7	263
11130	**Orange-flanked Bush-robin** *Tarsiger cyanurus*	1	0	0	0	0	1
11210	**Black Redstart** *Phoenicurus ochruros*	1579	76	61	87	124	1927
11220	**Common Redstart** *Phoenicurus phoenicurus*	5336	215	293	229	178	6251
11270	**Moussier's Redstart** *Phoenicurus moussieri*	3	1	2	0	0	6
11370	**Whinchat** *Saxicola rubetra*	5451	120	96	114	115	5896
11390	**Common Stonechat** *Saxicola torquatus*	4784	67	125	70	72	5118
11440	**Isabelline Wheatear** *Oenanthe isabellina*	7	0	0	0	2	9
11460	**Northern Wheatear** *Oenanthe oenanthe*	498	3	10	14	37	562
11480	**Black-eared Wheatear** *Oenanthe hispanica*	97	0	3	5	3	108
11620	**Rufous-tailed Rock-thrush** *Monticola saxatilis*	24	0	0	0	0	24
11660	**Blue Rock-thrush** *Monticola solitarius*	370	17	20	20	126	553
11860	**Ring Ouzel** *Turdus torquatus*	7	0	0	0	0	7
11870	**Eurasian Blackbird** *Turdus merula*	450	5	1	14	16	486
11950	**Eyebrowed Thrush** *Turdus obscurus*	0	0	0	0	1	1
11980	**Fieldfare** *Turdus pilaris*	4	0	0	0	2	6
12000	**Song Thrush** *Turdus philomelos*	3797	161	91	169	156	4374
12010	**Redwing** *Turdus iliacus*	38	0	0	0	0	38
12200	**Cetti's Warbler** *Cettia cetti*	4937	116	113	102	112	5380
12260	**Zitting Cisticola** *Cisticola juncidis*	10224	56	83	51	73	10487
12360	**Common Grasshopper-warbler** *Locustella naevia*	12	1	0	4	0	17
12370	**River Warbler** *Locustella fluviatilis*	3	0	0	0	0	3
12380	**Savi's Warbler** *Locustella luscinioides*	84	2	1	2	1	90
12410	**Moustached Warbler** *Acrocephalus melanopogon*	196	0	1	1	0	198
12430	**Sedge Warbler** *Acrocephalus schoenobaenus*	6302	158	244	435	199	7338
12470	**Paddyfield Warbler** *Acrocephalus agricola*	5	0	0	0	0	5

EURING number	species	1965 to 2018	2019	2020	2021	2022	Total 1965 to 2022
12480	**Blyth's Reed-warbler** *Acrocephalus dumetorum*	4	1	0	0	0	5
12500	**Marsh Warbler** *Acrocephalus palustris*	65	0	0	0	0	65
12510	**Common Reed-warbler** *Acrocephalus scirpaceus*	4258	66	92	113	78	4607
12530	**Great Reed-warbler** *Acrocephalus arundinaceus*	3037	64	119	110	80	3410
12550	**Olivaceous/Isabelline Warbler** *Iduna pallida/opaca*	5	0	0	0	0	5
12551	**Olivaceous Warbler** *Iduna pallida*	3	1	1	1	0	6
12552	**Isabelline Warbler** *Iduna opaca*	13	1	2	3	0	19
12590	**Icterine Warbler** *Hippolais icterina*	4708	168	208	80	253	5417
12600	**Melodious Warbler** *Hippolais polyglotta*	10	0	0	0	1	11
12610	**Marmora's Warbler** *Curruca sarda*	2	0	0	0	0	2
12620	**Dartford Warbler** *Curruca undata*	43	0	1	1	0	45
12640	**Spectacled Warbler** *Curruca conspicillata*	1560	0	1	2	3	1566
12650	**Subalpine Warbler** *Curruca cantillans*	13174	415	669	531	288	15077
12652	**Moltoni's Warbler** *Curruca subalpina*	2	0	1	0	1	4
12660	**Ménétries's Warbler** *Curruca mystacea*	1	0	0	0	0	1
12670	**Sardinian Warbler** *Curruca melanocephala*	26618	459	736	612	603	29028
12690	**Rüppell's Warbler** *Curruca ruppeli*	2	0	0	1	0	3
12720	**Western/Eastern Orphean Warbler** *Curruca hortensis/crassirostris*	5	0	0	0	0	5
12721	**Western Orphean Warbler** *Curruca hortensis*	1	0	0	0	0	1
12730	**Barred Warbler** *Curruca nisoria*	3	0	0	0	1	4
12740	**Lesser Whitethroat** *Curruca curruca*	102	5	4	7	0	118
12750	**Common Whitethroat** *Curruca communis*	13014	624	1137	1115	982	16872
12760	**Garden Warbler** *Sylvia borin*	39615	1424	1748	2119	2190	47096
12770	**Eurasian Blackcap** *Sylvia atricapilla*	28538	1130	1077	1255	986	32986
12950	**Arctic Warbler** *Phylloscopus borealis*	5	0	0	0	0	5
12980	**Pallas's Leaf-warbler** *Phylloscopus proregulus*	3	0	0	0	1	4
13000	**Yellow-browed Warbler** *Phylloscopus inornatus*	263	23	30	11	19	346
13002	**Hume's Leaf-warbler** *Phylloscopus humei*	0	0	1	0	0	1
13010	**Radde's Warbler** *Phylloscopus schwarzi*	2	0	1	0	0	3
13030	**Dusky Warbler** *Phylloscopus fuscatus*	9	0	0	1	0	10
13070	**Western/Eastern Bonelli's Warbler** *Phylloscopus bonelli/orientalis*	177	0	0	0	0	177
13071	**Western Bonelli's Warbler** *Phylloscopus bonelli*	35	4	1	3	6	49
13072	**Eastern Bonelli's Warbler** *Phylloscopus orientalis*	69	8	1	1	2	81
13080	**Wood Warbler** *Phylloscopus sibilatrix*	22599	1267	1827	749	1499	27941
13100	**Mountain Chiffchaff** *Phylloscopus sindianus*	1	0	0	0	0	1
13110	**Common Chiffchaff** *Phylloscopus collybita*	66766	1817	3221	2483	1876	76163
13120	**Willow Warbler** *Phylloscopus trochilus*	14319	737	793	499	463	16811
13140	**Goldcrest** *Regulus regulus*	824	14	23	17	21	899
13150	**Common Firecrest** *Regulus ignicapilla*	742	3	12	17	11	785
13350	**Spotted Flycatcher** *Muscicapa striata*	5452	215	162	114	298	6241
13430	**Red-breasted Flycatcher** *Ficedula parva*	164	1	1	6	2	174
13470	**Semi-collared Flycatcher** *Ficedula semitorquata*	66	4	1	6	0	77
13480	**Collared Flycatcher** *Ficedula albicollis*	1883	45	295	142	40	2405
13490	**European Pied Flycatcher** *Ficedula hypoleuca*	8790	187	586	257	296	10116
14620	**Eurasian Blue Tit** *Cyanistes caeruleus*	2	0	0	0	0	2
14640	**Great Tit** *Parus major*	2	0	0	0	0	2
14900	**Eurasian Penduline-tit** *Remiz pendulinus*	109	0	0	0	0	109
15080	**Eurasian Golden Oriole** *Oriolus oriolus*	1068	19	28	12	17	1144
15150	**Red-backed Shrike** *Lanius collurio*	139	0	0	0	2	141
15200	**Great Grey Shrike** *Lanius excubitor*	1	0	0	0	0	1
15230	**Woodchat Shrike** *Lanius senator*	1978	35	25	39	29	2106

EURING number	species	1965 to 2018	2019	2020	2021	2022	Total 1965 to 2022
15820	**Common Starling** *Sturnus vulgaris*	1115	36	54	9	47	1261
15830	**Spotless Starling** *Sturnus unicolor*	0	1	0	0	0	1
15920	**Spanish Sparrow** *Passer hispaniolensis*	44245	848	1070	804	1347	48314
15980	**Eurasian Tree Sparrow** *Passer montanus*	2637	76	169	117	159	3158
16330	**Red-eyed Vireo** *Vireo olivaceus*	1	0	0	0	0	1
16360	**Common Chaffinch** *Fringilla coelebs*	1541	39	26	130	20	1756
16380	**Brambling** *Fringilla montifringilla*	13	1	0	2	1	17
16400	**European Serin** *Serinus serinus*	345	0	5	57	3	410
16490	**European Greenfinch** *Chloris chloris*	486	0	26	105	4	621
16530	**European Goldfinch** *Carduelis carduelis*	137	3	4	14	2	160
16540	**Eurasian Siskin** *Spinus spinus*	29	3	14	145	3	194
16600	**Common Linnet** *Linaria cannabina*	964	1	34	212	0	1211
16660	**Red Crossbill** *Loxia curvirostra*	26	0	0	0	0	26
16760	**Trumpeter Finch** *Bucanetes githagineus*	0	0	0	1	0	1
16790	**Common Rosefinch** *Carpodacus erythrinus*	12	0	0	0	0	12
17170	**Hawfinch** *Coccothraustes coccothraustes*	106	1	2	81	4	194
18470	**Lapland Longspur** *Calcarius lapponicus*	1	0	0	0	0	1
18560	**Pine Bunting** *Emberiza leucocephalos*	1	0	0	0	0	1
18570	**Yellowhammer** *Emberiza citrinella*	1	0	0	0	0	1
18580	**Cirl Bunting** *Emberiza cirlus*	1	0	0	0	0	1
18660	**Ortolan Bunting** *Emberiza hortulana*	12	0	0	3	0	15
18680	**Cretzschmar's Bunting** *Emberiza caesia*	1	0	0	0	0	1
18730	**Rustic Bunting** *Emberiza rustica*	20	1	0	0	0	21
18740	**Little Bunting** *Emberiza pusilla*	17	0	0	1	1	19
18750	**Chestnut Bunting** *Emberiza rutila*	1	0	0	0	0	1
18760	**Yellow-breasted Bunting** *Emberiza aureola*	1	0	0	0	0	1
18770	**Reed Bunting** *Emberiza schoeniclus*	634	9	13	10	4	670
18820	**Corn Bunting** *Emberiza calandra*	449	0	0	1	0	450
90100	**Barn Swallow** *Hirundo rustica* x **House Martin** *Delichon urbicum*	6	0	0	0	0	6
90540	**Tree Sparrow** *Passer montanus* x **Spanish Sparrow** *Passer hispaniolensis*	2	0	0	0	0	2
90740	**Red-backed Shrike** *Lanius collurio* x **Woodchat Shrike** *Lanius senator*	1	0	0	0	0	1
	Total	**616,214**	**19,490**	**23,831**	**25,941**	**21,230**	**706,706**

Ringing Sites

Different ringing sites around the Maltese Islands were used by ringers in this period. These included Għadira NR and Simar NR, where ringing was carried out on most days of the year. Ringing was also carried out in Wied l-Aħmar on Kemmuna as part of the scheme's spring and autumn migration ringing campaigns at the Kemmuna Bird Observatory. Buskett is also another important site surveyed throughout the year. Other important areas used include privately owned sites at Mġarr ix-Xini in Gozo, Mtaħleb and Manikata. In total, these seven sites alone resulted in more than 70,000 birds ringed over the four-year period under review. Other sites included Salina, Foresta 2000 and various sites in and around Rabat.

Seabird colonies were also monitored through ringing at various sites on mainland Malta, Gozo and Kemmuna and also at islets such as Kemmunett, Filfla and St Paul's Islands. Over 10,000 birds of the three breeding tubenose species were ringed in this period, mostly European Storm-petrels on Filfla.

Ringing Recoveries

Key to symbols and terms used in the recovery list

ARRANGEMENT OF ENTRY

Recoveries are grouped by species, sorted according to their EURING code. Within each species, recoveries are sorted by recovery date (oldest first).

Ringing details are given on the first line and recovery data on the second.

SCHEME

The EURING code of the ringing scheme to which the metal ring belongs to is given before each metal ring. Below is a list of schemes & their codes featuring in this report.

code	country	ringing centre
AUW	Austria	Wien (Vienna)
BGS	Bulgaria	Sofia
BLB	Belgium	Bruxelles
CZP	Czech Republic	Praha
DEH	Germany	Hiddensee
DER	Germany	Radolfzell
DKC	Denmark	Copenhagen
ESA	Spain	Aranzadi
ESC	Spain	Catalan Ornithological Institute (ICO)
ESI	Spain	Madrid (ICONA)
ETM	Estonia	Matsalu
FRP	France	Paris
GRA	Greece	Athens
HGB	Hungary	Budapest
HRZ	Croatia	Zagreb (Ornit. Inst.)
IAB	Italy	Bologna Ozzano (BO)
LIK	Lithuania	Kaunas (Zool. Mus.)
MLV	Malta	Valletta
NLA	Netherlands	Arnhem
NOS	Norway	Stavanger Museum
PLG	Poland	Gdansk; Varsovia
ROB	Romania	Bucharest
RSB	Rep. of Serbia	Belgrade
RUM	Russian Fed.	Moskwa
SFH	Finland	Helsinki Museum
SKB	Slovakia	Bratislava
SLL	Slovenia	Ljubljana
SVS	Sweden	Stockholm Museum
UKK	Ukraine	Kiev

RING NUMBERS

The unique identifier is always the metal ring number. If present, any other markers such as flags and colour rings, are also given. Colour rings are described as follows: Code (ring/flag colour)

AGE CODES

EURING age codes are used. Only age at ringing is given.

0 Age unknown, i.e. not recorded.
1 Pullus in nest, nestling.
1J Chick, out of nest but unable to fly freely, still able to be caught by hand.
2 Full-grown: able to fly freely but age otherwise unknown.
3 First-year: full-grown bird hatched in the breeding season of this calendar year.
4 After first-year: full-grown bird hatched before this calendar year; year of hatching unknown.
5 2nd year: a bird hatched last calendar year and now in its second calendar year.
6 After 2nd year: full-grown bird hatched before last calendar year; year of hatching unknown

SEX CODES

M male, **F** female

DATE OF RECOVERY

Where this is unknown, the date of the reporting letter is given instead and is shown in brackets. A 00 in the date indicates that the exact day and/or month are unknown.

ACCURACY OF COORDINATES

Accuracy of coordinates is accurate to the given coordinates (defined by EURING as somewhere in the radius of 1km) unless the coordinates are given in brackets. In such cases accuracy may vary by case. For locations within the Maltese Islands, if exact coordinates were not reported, no coordinates are given.

MANNER OF RECOVERY

The field 'manner of recovery' used in previous Ringing Reports in il-Merill has been replaced with more accurate combination of [Condition of Bird] followed by [Circumstances of Recovery] as described below.

CONDITION OF BIRD

The condition of the bird at the moment of recovery is given and coded numerically as per below list. This is based on EURING's exchange code.

0 Condition completely unknown.
1 Dead but no information on how recently the bird had died (or been killed).
2 Freshly dead – within about a week.
3 Not freshly dead – information available that it had been dead for more than about a week.
4 Found sick, wounded, unhealthy, etc. and known to have been released (including ring or other mark identified on a bird in poor condition without the bird having being caught).
5 Found sick, wounded, unhealthy etc. and not released or not known if released.
6 Alive and probably healthy but taken into captivity.
7 Alive and probably healthy and certainly released (including ring or other mark identified on a healthy bird without the bird having being caught).
8 Alive and probably healthy and released by a ringer (including ring or other mark identified on the bird by a ringer without the bird having being caught).
9 Alive and probably healthy but ultimate fate of bird not known.

CIRCUMSTANCES OF RECOVERY

The circumstances of the encounter are given and coded numerically as per below list. This is based on EURING's exchange code. All Primary Divisions defined by EURING are given below whilst only the specific codes used in this report are shown.

0 Unknown circumstances or unknown whether through man's agency or naturally (includes attracted to domestic animals)
01 Bird or body found
1 Intentionally by man: shot
10 Shot
2 Intentionally by man: other means (including trapped, poisoned, ring number read in field, etc.). All captures (= ringing data) and recaptures (caught and released)
20 Intentionally taken: hunted, trapped (including all captures by ringers)
3 Accidentally by man: pollution
4 Accidentally through human agency (not pollution): includes traffic accidents, collision with wires, etc., entering man-made artefacts, accidents with machinery, drowned at artificial water
5 Natural causes: diseases and other natural ailments
58 Sick
6 Predation by any animal other than man
7 Other natural causes. Drowned (natural water bodies), trapped, tangled and collided with natural objects and also weather and starvation or thirst
8 Bird identified from something other than metal ring
81 Bird identified from coloured or numbered leg ring(s)
9 Other special circumstances
99 Totally unknown circumstance: not even stated to be 'found'

Foreign ringed birds recovered in Malta

[00522] **European Storm-Petrel** *Hydrobates pelagicus*

IAB **KN16734**	1	16.07.2004	Marettimo Island, Trapani, Sicily, **ITALY**. 37°58'35.2"N 12°02'23.3"E
	[8][20]	02.08.2019	Filfla Island, Malta. 35°47'14.4"N 14°24'35.3"E
	[8][20]	21.07.2021	Filfla Island, Malta. 35°47'14.4"N 14°24'35.3"E

[01340] **White Stork** *Ciconia ciconia*

DER [Only CR]	1	05.06.2018	Ipsheim, **GERMANY**. 49°31'34.0"N 10°28'48.0"E
AIG60 (black)	[7][81]	02.03.2020	Birkirkara. 35°53'51.4"N 14°27'31.8"E

[01440] **Eurasian Spoonbill** *Platalea leucorodia*

FRP **CF47426**	1	21.04.2017	Radeau / Grande Camargue - Bouches-du-Rhône, **FRANCE**. 43°28'36.0"N 4°29'03.0"E
ANXL (white)	[7][81]	03.12.2021	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E

[02310] **European Honey-buzzard** *Pernis apivorus*

DER **JC3477**	1	30.07.1985	Fürstenfeld, Steiermark, **AUSTRIA**. 47°03'00.0"N, 16°04'48.0"E
	[2][10]	15.10.1985	Marsaskala, Malta.

[03010] **Osprey** *Pandion haliaetus*

SFH **M72835**	1	29.06.2019	Valkeakoski, Pirkanmaa, Häme, **FINLAND**.
PYP (yellow)	[3][10]	09.02.2020	Saint Paul's Islands. 35°57'54.6"N, 14°24'03.0"E;
ETM A16682	1	02.07.2020	Roostoja, Ida-Viru County, **ESTONIA**. 58°19'55.0"N 26°45'10.0"E
VN (black)	[7][81]	08.05.2022	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E

[03030] **Lesser Kestrel** *Falco naumanni*

GRA **N211752**	1	20.06.2014	Armenio, **GREECE**. 39°29'09.3"N 22°41'37.9"E
	[5][10]	29.03.2020	Ħ'Attard. (35°53'36.2"N 14°26'20.1"E)

[03040] **Common Kestrel** *Falco tinnunculus*

AUW **L002636**	3	08.06.2019	Haringsee/Eulen und Greifvogelstation, Niederösterreich, **AUSTRIA**.48°11'26.8"N 16°47'30.6"E
	[5][10]	28.10.2020	Għajnsielem, Gozo. (36°01'35.0"N 14°16'58.6"E)

[04690] **Little Ringed Plover** *Charadrius dubius*

AUW **SA00524**	3	04.08.2019	Illmitz NP Biologische Station, Burgenland, **AUSTRIA**. 47°46'07.8"N 16°45'58.0"E
	[7][28]	25.07.2020	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E

[04850] **European Golden Plover** *Pluvialis apricaria*

NLA **1561875**	3	24.09.2013	Schiermonnikoog, **NETHERLANDS**. 53°28'35.0"N 6°12'05.0"E
	[6][21]	19.12.2022	Għajnsielem, Gozo.

[05020] **Temminck's Stint** *Calidris temminckii*

HGB **SN02261**	3	27.08.2019	Fertőújlak (Borsodi dűlő), Győr-Moson-Sopron, **HUNGARY**. 47°40'55.0"N 16°50'25.0"E
AU (green flag	[7][81]	02.05.2020	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E
+ yellow cr)			
HGB **SN02261**	3	28.08.2021	Sarród (Nyéki-szállás), Győr-Moson-Sopron, **HUNGARY**. 47°40'36.0"N 16°49'38.0"E
HE (green flag	[4][21]	20.09.2022	Ħal Tarxien, Malta. 35°50'37.0"N 14°31'21.1"E
+ yellow cr)			

[05460] **Common Redshank** *Tringa totanus*

HGB **LM01184**	3	07.08.2018	Fertőújlak (Borsodi dűlő), Győr-Moson-Sopron, **HUNGARY**. 47°40'55.0"N 16°50'25.0"E
CT (green flag	[7][81]	04.07.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
+ yellow cr)			

[05540] **Wood Sandpiper** *Tringa glareola*

SFH **PT069801**	1J	19.06.2019	Anu Tillanen, Vanhalanmäentie, Mikkeli, FINLAND. 69°56'00.0"N 28°04'00.0"E
	[7][28]	13.08.2022	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E

[05750] **Mediterranean Gull** *Larus melanocephalus*

ESI **5151654**	5	25.02.2022	Velez-Malaga, **SPAIN**. 36°46'16.1"N 4°06'05.0"W
5EO2 (blue)	[7][81]	04.04.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E

[05820] **Black-headed Gull** *Larus ridibundus*

HRZ **LS03613**	3	04.12.2016	Jakuševec, Zagreb, **CROATIA**. 45°45'54.0"N 16°01'24.8"E
S0EC (white)	[7][81]	19.12.2018	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	26.11.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	18.12.2020	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	02.12.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	05.01.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
UKK **K002558**	1	08.06.2017	Chervona Sloboda, Cherkassy, **UKRAINE**. 49°22'00.0"N 32°13'00.0"E
U558 (yellow)	[7][81]	06.01.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
PLG **FS31081**	3	24.11.2018	Sady Żoliborskie, Warsaw, **POLAND**. 52°16'05.8'' N 20°57'56.5'' E
TP3R (yellow)	[7][81]	11.02.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[4][58]	05.01.2020	St. Thomas Bay, Marsascala. 35°51'12.8"N 14°33'56.4"E
	[7][81]	01.12.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	22.01.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	09.03.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	08.12.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
HGB **SH03702**	3	08.11.2015	Szeged (Baktó), Csongrád, **HUNGARY**. 46°18'25.0"N 20°8'25.0"E
HA37 (red)	[7][81]	18.02.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	07.02.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	19.01.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E

PLG **FS35946**	1	14.06.2019	Walendow, **POLAND**. 52°04’58.7”N 20°50’26.7”E
TNAR (yellow)	[7][81]	29.12.2019	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	05.01.2020	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	15.02.2020	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	31.12.2020	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	21.01.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	07.02.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	17.12.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	05.01.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	08.02.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
HGB **SH08590**	1	19.06.2019	Nyékládháza (Debreczeni-tó), Borsod-Abaúj-Zemplén, **HUNGARY**. 47°58’38.0”N 20°51’59.0”E
H573 (yellow)	[7][81]	11.01.2020	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	16.12.2020	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	11.02.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	12.01.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	11.02.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	03.12.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	05.01.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	01.03.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
HGB **SH07111**	1	02.06.2019	Rétszilas, Fejér, **HUNGARY**. 46°50’46.0”N 18°34’29.0”E
H7TJ (red)	[7][81]	21.03.2020	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	29.11.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	20.01.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	01.02.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	08.02.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	31.10.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
PLG **FS39307**	1	07.06.2020	WYSPA NA RZ.WISŁA,WYKOWO,SŁUPNO, MAZOWIECKIE, **POLAND**. 52°28’34.0”N 19°49’48.1”E
TLNP (yellow)	[7][81]	15.12.2020	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	23.11.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	03.01.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	05.01.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	02.03.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
HGB **SH01164**	3	30.08.2014	Szeged (Baktó), Csongrád, **HUNGARY**. 46°18’25.0”N 20°8’25.0”E
HU8R (red)	[7][81]	11.02.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	19.02.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	10.01.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	15.12.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
PLG **FS39307**	1	27.11.2019	Staw Młyński, Gdańsk, **POLAND**. 54°24’47.1’’ N 18°34’03.5’’ E
TNXU (yellow)	[7][81]	21.02.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
HRZ **LS05194**	3	16.12.2018	Novi Zagreb - istok, **CROATIA**. 45°45’48.7”N 16°01’39.9”E
S3YN (white)	[7][81]	23.11.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
HGB **SH09406**	1	29.05.2018	Sárbogárd, **HUNGARY**. 46°50’8.0”N 18°34’28.0”E
H358 (yellow)	[7][81]	23.11.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	29.12.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	06.01.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	15.03.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
UKK **J006879**	1	06.06.2017	Zdolbunivs’kyi, Rivne Oblast, **UKRAINE**. 50°31’0.0’’ N 26°17’0.0’’ E
U655 (yellow)	[7][81]	29.11.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	08.12.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[7][81]	22.12.2022	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
PLG **FS02857**	1	2.05.2020	Niwka, **POLAND**. 50°02’38.6”N 20°50’48.1”E
TME9 (white)	[7][81]	09.12.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E

	[7][81]	14.12.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	18.12.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	08.02.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	31.10.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
HRZ **LS07951**	3	12.12.2021	Jakuševec, Zagreb, **CROATIA**. 45°45'54.0"N 16°01'24.8"E
S0041 (yellow)	[7][81]	26.12.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	10.01.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
PLG **FS49498**	3	13.11.2021	Szczecin, **POLAND**. 53°25'51.4"N 14°31'02.1"E
T0TV (blue)	[7][81]	15.03.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
HGB **SH09700**	1	29.05.2021	Sárbogárd, **HUNGARY**. 46°50'8.0"N 18°34'28.0"E
HA55 (yellow)	[7][81]	03.12.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	30.12.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
HGB **SH10407**	3	03.11.2022	Budapest, **HUNGARY**. 47°30'50.0"N 19°02'47.0"E
HZ3U (red)	[7][81]	08.12.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	23.12.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
[05850] **Slender-billed Gull** *Larus genei*			
ESA **AGX04639**	1	24.06.2006	Veta La Palma, Sevilla, **SPAIN**. 36°57'53.0"N 6°13'55.1"W
RW6 (white)	[7][81]	06.01.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
[05880] **Audouin's Gull** *Larus audouinii*			
IAB **N26400**	1	22.06.2013	Is. Vendicari, Noto, Siracusa, Sicily, **ITALY**. 36°47'29.5"N 15°06'20.6"E
INLS (white)	[7][81]	03.01.2019	St George's Bay, Birżebbuġa. 35°49'56.7"N 14°31'54.7"E
IAB **N26381**	1	01.07.2011	Is. Vendicari, Noto, Siracusa, Sicily, **ITALY**. 36°47'29.5"N 15°06'20.6"E
INJD (white)	[7][81]	16.02.2019	Marsaxlokk. 35°50'17.9"N 14°32'44.3"E
	[7][81]	18.02.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
ESC **6144640**	1	25.06.2003	P.Banya, St. Carles de la Ràpita (Tarragona), **SPAIN**. 40°34'00.6"N 0°40'17.5"E
ALHT (white)	[7][81]	22.02.2019	St George's Bay, Birżebbuġa. 35°49'56.7"N 14°31'54.7"
IAB **N30171**	1	19.06.2020	Latina, Gaeta, Punta Stendardo, **ITALY**. 41°12'31.7"N 13°34'43.7"E
ISTJ (white)	[7][81]	10.08.2020	Qawra, San Pawl il-Baħar. 35°57'34.1"N 14°25'24.5"E
IAB **N16635**	1	22.06.2021	Is. Pedagne, Brindisi, **ITALY**. 40°39'17.8"N 17°59'59.8"E
ITZZ (white)	[7][81]	19.08.2021	Għallis, l/o Naxxar. 35°57'05.7"N 14°26'37.7"E
IAB **N33460**	1	24.06.2021	Is. Isca, Napoli, **ITALY**. 40°35'16.4"N 14°22'35.3"E
ITAC (white)	[7][81]	19.08.2021	Għallis, l/o Naxxar. 35°57'05.7"N 14°26'37.7"E
IAB **N16634**	1	22.06.2021	Is. Pedagne, Brindisi, **ITALY**. 40°39'17.8"N 17°59'59.8"E
ITZV (white)	[7][81]	05.09.2021	Qawra, San Pawl il-Baħar. 35°57'34.1"N 14°25'24.5"E
HRZ **MA04657**	1	11.06.2021	Otočić Pod Mrčaru, **CROATIA**. 42°46'47.0"N 16°46'30"E
P8 (yellow)	[7][81]	15.10.2021	Qawra, St. Paul's Bay. 35°57'34.1"N 14°25'24.5"E
	[7][81]	29.12.2021	Marsaxlokk Bay. 35°57'25.0"N 14°14'00.9"E
IAB **N30521**	1	13.06.2014	Is. Ischia, Napoli, **ITALY**. 40°43'44.9"N 13°54'03.8"E
INDS (white)	[7][81]	03.02.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
IAB **N33877**	1	21.06.2022	Is. Sant' Andrea, Gallipoli, Lecce, **ITALY**. 40°43'44.9"N 13°54'03.8"E
IVJF (white)	[7][81]	14.08.2022	Għallis, l/o Naxxar. 35°57'05.7"N 14°26'37.7"E
[05910] **Lesser Black-backed Gull** *Larus fuscus*			
NOS **4291858**	1	15.07.2019	Store Lyngholmen, Søgne, Vest-Agder, **NORWAY**. 58°03'24.0"N 7°55'18.0"E
J528M (black)	[7][81]	25.11.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	31.12.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E

SFH **CT183486**	3J	17.07.2019	Rantasalmi, Etelä-Savo, Mikkeli, **FINLAND**. 62°09'00.0"N 28°23'00.0"EC5TH (white)
	[7][81]	19.01.2020	St George's Bay, Birżebbuġa. 35°49'56.7"N 14°31'54.7"E
SFH **FF00697**	3J	04.07.2019	Mänttä-Vilppula, Pirkanmaa, Häme, **FINLAND**. 62°07'00.0"N 24°07'00.0"E
CPPC (white)	[7][81]	05.07.2020	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
NOS **4254207**	1	02.07.2020	Store Lyngholmen, Søgne, Vest-Agder, **NORWAY**. 58°03'24.0"N 7°55'18.0"E
J907M (black)	[7][81]	03.11.2020	Għallis, L/O Naxxar. 35°57'05.7"N 14°26'37.7"E
	[7][81]	08.01.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
NOS **4273570**	1	30.06.2019	Lyngøya, Tysnes, **NORWAY**. 60°04'34" N 005°30'57" E
JC70A (black)	[7][81]	24.08.2021	Għallis, l/o Naxxar. 35°57'05.7"N 14°26'37.7"E
SFH **FF02474**	1	07.07.2021	Uusikaarlepyy, Pohjanmaa, Vaasa, **FINLAND**. 63°38'06.4"N 22°24'39.4"E
CS4S (white)	[7][81]	06.12.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
DKC **3073268**	1	19.06.2021	Agersø, Skælskør, **DENMARK**. 55°11'42.00"N 011°13'00.00"E
J161Y (black)	[7][81]	06.12.2021	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
SFH **HT275340**	1J	09.07.2020	Taipalsaari. Etela-Karjala, **FINLAND**. 61°09'05.4"N 27°58'56.9"E
	[7][81]	13.01.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
NOS **4291677**	1	22.07.2020	Andopen, Nordland, **NORWAY**. 68°01'08.0"N 13°10'22.0"E
JC77U (black)	[7][81]	09.09.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
SFH **FF04466**	1J	10.07.2022	Uusikaarlepyy, Pohjanmaa, Vaasa, **FINLAND**. 63°38'06.4"N 22°24'39.4"E
C.8TN (white)	[7][81]	22.11.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
SFH **FF01949**	1J	20.07.2022	Mustasaari, Pohjanmaa, Vaasa, **FINLAND**. 63°14′ 00.0"N 20°40′ 00.0"E
CX64 (yellow)	[7][81]	03.12.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
[05926] **Yellow-legged Gull** *Larus michahellis*			
IAB **CK4631**	1	08.05.2019	Is. Delle Femmine, Palermo, Sicily, **ITALY**. 38°12'36.9"N 13°14'11.2"E
	[5][58]	17.04.2020	Ċirkewwa. 35°59'16.0"N 14°19'40.5"E
HRZ **PS03710**	3	08.11.2020	Jakuševec, Zagreb, **CROATIA**. 45°45'54.0"N 16°01'24.8"E
0N6H (orange)	[7][81]	23.12.2020	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
[05927] **Caspian Gull** *Larus cachinnans*			
PLG **DN15495**	3	20.08.2018	Świnoujście:plaża, ZACHODNIOPOMORSKIE, **POLAND**. 53°55'20.8'N 14°15'01.4"E
P:H32 (yellow)	[7][81]	21.01.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
CZP **C163138**	1	31.05.2021	Bošilec, Dolní Bukovsko, **CZECHIA**. 49°08'08.0"N 14°39'37.8"E
77A:U (yellow)	[7][81]	08.01.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
PLG **DN41066**	1	14.05.2020	Podłęcze, **POLAND**. 53°55'20.8'N 14°15'01.4"E
P:AHO (yellow)	[7][81]	22.02.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
DEH **EA223058**	1	13.06.2021	Berlin, **GERMANY**. 52°31'00.0"N 13°25'00.0"E
XKNM (yellow)	[7][81]	02.03.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[7][81]	06.04.2022	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
[06060] **Caspian Tern** *Hydroprogne caspia*			
SVS **7208675**	1	29.06.2016	Gotlands Län, Rute, Grauten, **SWEDEN**. 57°44'00.0"N 19°01'00.0"E
RHT (red)	[7][81]	02.04.2020	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
[06110] **Sandwich Tern** *Sterna sandvicensis*			
BGS **3-16845**	1	06.07.2011	Pomorie Lake, Burgas, **BULGARIA**. 42°34'02.0"N, 027°37'54.0"E
CLZ (green)	[7][81]	09.02.2019	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
[08310] **Common Kingfisher** *Alcedo atthis*			
SKB **M13174**	3	31.08.2021	Piešťany, **SLOVAKIA**. 48°32'53.17"N 17°49'10.16"E
	[8][20]	03.10.2021	Għadira Nature Reserve, Mellieha. 35°58'12.5"N 14°20'56.4"E

[09920] **Barn Swallow** *Hirundo rustica*

DEH **ZH52060**	4M	28.04.2018	Kriele, Havelland, Brandenburg, **GERMANY**. 52°40'00.0"N 12°33'00.0"E
	[8][20]	11.04.2019	Mġarr ix-Xini, Gozo. 36°01'15.0"N 14°16'10.0"E
HGB **W645002**	3	25.09.2019	Dávod, Bács-Kiskun, **HUNGARY**. 45°59'27"N 18°51'59"E
	[8][20]	10.10.2019	Simar Nature Reserve, San Pawl il-Baħar. 35°56'46.4"N 14°22'53.3"E
SKB **U61222**	3	21.07.2020	Uzovský Šalgov, **SLOVAKIA**. 49°5'34.84" N 21°4'0.05" E
	[8][20]	29.04.2021	Simar Nature Reserve, San Pawl il-Baħar. 35°56'46.4"N 14°22'53.3"E

[10090] **Tree Pipit** *Anthus trivialis*

GRA **A301307**	4	28.04.2019	Antikythira Bird Observatory, Aegean Isl., **GREECE**. 35°51'50.0" N 023°18'20.0" E
	[8][20]	02.05.2021	Mtaħleb, l/o Rabat, Malta. 35°52'50.1"N 14°22'01.5"E

[10110] **Meadow Pipit** *Anthus pratensis*

NOS **EK26928**	3	22.08.2019	Nyrud (Pasvik Naturreservat) Ringing Station, Finnmark, **NORWAY**. 69°08'50.0"N 29°14'35.0"E
	[8][20]	18.10.2019	Kemmuna Bird Observatory, Kemmuna. 36°00'41.3"N 14°20'28.7"E

[10170] **Western Yellow Wagtail** *Motacilla flava*

PLG **K4T6465**	3	30.08.2015	Gmina Rogoźno, **POLAND**. 52°43'10.1" N 17°03'24.4" E
	[7][28]	10.04.2021	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E

[10200] **White Wagtail** *Motacilla alba*

PLG **K029912**	1	28.06.2021	Gmina Drawno, **POLAND**. 53°08'30.5" N 15°50'51.9" E
A95 (white)	[7][81]	01.11.2021	Pembroke, Malta. 35°56'08.6"N 14°28'48.8"E

[10840] **Dunnock** *Prunella modularis*

SVS **1HA87395**	3	11.09.2022	Västerbottens Län, Obbola, **SWEDEN**. 63°43'00.0"N 20°20'00.0"E
	[8][20]	11.11.2022	Mtaħleb, l/o Rabat, Malta. 35°52'50.1"N 14°22'01.5"E

[10990] **European Robin** *Erithacus rubecula*

SKB **S612008**	3	17.10.2021	Modra, **SLOVAKIA**. 48°18'49.4"N 17°19'10.7"E
	[8][20]	20.10.2022	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E

[11060] **Bluethroat** *Cyanecula svecica*

CZP **TZ41406**	3	06.09.2020	Soběslav, Jihočeský kraj, **CZECHIA**. 49°14'2"N 14°44'23.06"E
	[8][20]	04.03.2021	Simar Nature Reserve, San Pawl il-Baħar. 35°56'46.4"N 14°22'53.3"E

[12000] **Song Thrush** *Turdus philomelos*

ROB **P013056**	3	11.10.2020	Agigea, **ROMANIA**. 44°05'10.0"N 028°38'27"E
	[8][20]	19.10.2021	Kemmuna Bird Observatory, Kemmuna. 36°00'41.3"N 14°20'28.7"E

[12430] **Sedge Warbler** *Acrocephalus schoenobaenus*

ETM **CB57424**	3	28.08.2019	Vaibla Bird Observatory, Vaibla, Viljandi, **ESTONIA**. 58°24'18.5"N 26°04'33.0"E
	[8][20]	17.04.2020	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E
ETM **CB27205**	3	02.09.2017	Tartu, Kambja vald, Soinaste, **ESTONIA**. 58°19'55.0"N 26°45'10.0"E
	[8][20]	25.04.2020	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E
SLL **KV58340**	3	17.08.2019	Hraše, Medvode, **SLOVENIA**. 46°10'0.0"N 14°27'0.0"E
	[8][20]	08.09.2021	Kemmuna Bird Observatory, Kemmuna. 36°00'41.3"N 14°20'28.7"E

[12510] **Common Reed-warbler** *Acrocephalus scirpaceus*

SFH **HF90552**	3	30.08.2022	Virolahti, Kymenlaakso, **FINLAND**. 60°31'00.0"N 27°43'00.0"E
	[8][20]	05.10.2022	Simar Nature Reserve, San Pawl il-Baħar. 35°56'46.4"N 14°22'53.3"E

[12530] **Great Reed-warbler** *Acrocephalus arundinaceus*

RSB **D013827**	4	01.08.2022	Zasavica Nature Reserve, **SERBIA**. 44°57'30.9"N 19°31'42.4"E
	[8][20]	31.08.2022	Mtaħleb, l/o Rabat, Malta. 35°52'50.1"N 14°22'01.5"E

[12760] **Garden Warbler** *Sylvia borin*

SLL **AY06457**	4	09.08.2020	Vrhnika, **SLOVENIA**. 45°58'00.00" N 014°18'00.00" E
	[8][20]	30.04.2021	Kemmuna Bird Observatory, Kemmuna. 36°00'41.3"N 14°20'28.7"E

CZP **TZ75099**	3	13.08.2021	Ludkovice-Biskupice u Luhačovic, **CZECHIA**. 49°5’41.21”N 17°43’29.03”E
	[8][20]	30.08.2021	Buskett, l/o Siġġiewi. 35°51’28.5”N 14°23’52.4”E
RUM **XJ70707**	3	16.08.2021	Curonian Spit National Park, KALININGRAD, **RUSSIA**. 55°09’0.0”N 20°51’0.0”E
	[8][20]	25.09.2021	Mtaħleb, l/o Rabat, Malta. 35°52’50.1”N 14°22’01.5”E
SFH **990728V**	3	07.08.2020	Arrajoki, **FINLAND**. 60°59’00.0”N 26°03’00.0”E
	[8][20]	27.08.2022	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
SLL **AY86222**	3	04.09.2022	Vrhnika, **SLOVENIA**. 45°58’00.0”N 14°18’00.0”E
	[8][20]	27.09.2022	Mtaħleb, l/o Rabat, Malta. 35°52’50.1”N 14°22’01.5”E

[12770] **Eurasian Blackcap** *Sylvia atricapilla*

DEH **VH12826**	3F	29.09.2018	Greifswalder Oie Vorpommern-Greifswald, Mecklenburg-Vorpommern, **GERMANY**. 54°15’00.0”N 13°55’00.0”E
	[8][20]	11.11.2018	Mġarr ix-Xini, Gozo. 36°01’15.0”N 14°16’10.0”E
NOS **EM72695**	3M	01.09.2018	Revtangen OS, Kleppe, **NORWAY** 58°45’43.0”N 5°30’29.0”E
	[8][20]	01.12.2018	Buskett, l/o Siġġiewi. 35°51’28.5”N 14°23’52.4”E
BLB **15778556**	3F	14.09.2018	Stockay, LIEGE, **BELGIUM**. 50°35’00.0”N 5°21’00.0”E
	[8][20]	11.04.2019	Simar Nature Reserve, San Pawl il-Baħar. 35°56’46.4”N 14°22’53.3”E
DKC **BX90401**	3F	07.09.2019	Fanø Fuglestation, Strandkrattet, Fanø, Syddanmark, **DENMARK**. 55°20’57.08”N 8°26’9.65”E
	[8][20]	17.12.2019	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
HGB **K572737**	3M	04.08.2016	Sumony, Baranya, **HUNGARY**. 45°58’10.0”N 17°53’59.0”E
	[8][20]	02.11.2022	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E

[13110] **Common Chiffchaff** *Phylloscopus collybita*

SLL **KV17127**	4	14.08.2016	Slovenja vas, Ptuj, **SLOVENIA**. 46°27’00.0”N 15°49’00.0”E
	[8][20]	01.12.2019	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
CZP **F200853**	3	07.08.2020	Dívčice, Jihočeský kraj, **CZECHIA**. 49°06’31.4”N 14°18’45.6”E
	[8][20]	03.11.2020	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
IAB **7J8583**	4	22.10.2020	Ventotene Island, **ITALY**. 40°47’23.5”N 13°25’05.8”E
	[8][20]	07.02.2021	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
DEH **OX4705**	3	18.07.2021	Gelenau I: Hütte, Erzgebirgskreis, Sachsen, **GERMANY**. 50°43’35.0”N 12°58’18.0”E
	[8][20]	11.10.2021	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
CZP **JJ1549**	4	16.09.2020	Praha (Hostavice), **CZECHIA**. 50°5’42.07”N 14°33’54.76”E
	[8][20]	07.11.2021	Buskett, l/o Siġġiewi. 35°51’28.5”N 14°23’52.4”E
HGB **W659688**	3	12.10.2022	Tömörd, **HUNGARY**. 47°21’23.0”N 16°40’04.0”E
	[8][20]	05.12.2022	Buskett, l/o Siġġiewi. 35°51’28.5”N 14°23’52.4”E

[13120] **Willow Warbler** *Phylloscopus trochilus*

GRA **AK5717**	4	31.03.2018	Antikythira Bird Observatory, Aegean Isl., **GREECE**. 35°51’50.0” N 023°18’20.0” E
	[8][20]	01.04.2019	Simar Nature Reserve, San Pawl il-Baħar. 35°56’46.4”N 14°22’53.3”E
FRP **2J2301**	3	07.09.2012	RNN marais d’Yves, Yves, Poitou-Charentes, **FRANCE**. 46°02’06.5”N 1°03’04.4”W
	[8][20]	08.05.2019	Kemmuna Bird Observatory, Kemmuna. 36°00’41.3”N 14°20’28.7”E

[13480] **Collared Flycatcher** *Ficedula albicollis*

SVS **DC56554**	5M	01.06.2019	GOTLAND, ÖJA, KYRKÄNGET, **SWEDEN**. 57°02’00.0”N 18°18’00.0”E
	[8][20]	14.04.2020	Simar Nature Reserve, San Pawl il-Baħar. 35°56’46.4”N 14°22’53.3”E

[16400] **European Serin** *Serinus serinus*

IAB **3J3159**	6F	19.03.2020	Isola Di Ponza, Ponza, Latina, **ITALY**. 40°54’54.86”N 12°57’49.39”E
	[9][20]	21.11.2020	Marsaxlokk, Malta.

[16490] **European Greenfinch** *Chloris chloris*

IAB **LJ13414**	U	16.04.2021	Giovanni in Marignano, Invaso del Conca, **ITALY**. 43°57’14.4”N 12°41’52.2”E
	[9][20]	26.11.2021	Qala, Gozo.

[16540] **Eurasian Siskin** *Spinus spinus*

ETM **CB91486**	3	10.09.2019	Pärnu maakond, Häädemeeste vald, Kabli küla, **ESTONIA**. 58°00’50.6”N 24°26’58.4”E
	[9][20]	20.10.2020	Baħrija, Malta.
RUM **P210483**	3F	11.09.2017	Zelenogradskiy distr., Rybachiy, **KALININGRAD**, RUSSIA. 54°58’30.2”N 20°30’37.8”E
	[9][20]	14.11.2020	Baħrija, Malta.
IAB **9J0411**	U	10.09.2019	Monte Pizzoc, Fregona, Treviso, **ITALY**. 46°02’43.6”N 12°20’14.3”E
	[9][20]	08.11.2021	Sanap, Gozo.
SKB **S457477**	4F	08.11.2018	Trenčianska Teplá, Trenčín, **SLOVAKIA**. 48°54’42.4”N 18°06’40.4”E
	[9][20]	14.11.2021	Delimara, Malta.
IAB **4J7633**	U	23.10.2021	Passo della Berga, Bagolino, **ITALY**. 45°47’55.3”N 10°25’12.9”E
	[9][20]	16.11.2021	Marsaskala, Malta.
GRA **A310077**	3F	23.10.2021	Rodokalos,Oiti, Fthiotis, Sterea Ellas, **GREECE**. 38°51’18.0”N 22°14’39.0”E
	[9][20]	16.11.2021	Malta.
HGB **T81-981**	U	01.10.2020	Ostoros, Heves, **HUNGARY**. 47°52’40.0”N 20°25’23.0”E
	[9][20]	17.11.2021	Żebbuġ, Gozo.
SLL **KK30353**	U	11.10.2021	Verd, Vrhnika, **SLOVENIA**. 45°57’26.0”N 14°18’58.9”E
	[9][20]	22.11.2021	Kerċem, Gozo.
LIK **XX71996**	3M	30.09.2021	Juodkrantės didžioji gaudyklė, Kuršių nerija, **LITHUANIA**. 55°33’56.9”N 21°06’11.9”E
	[9][20]	26.11.2021	Swieqi, Malta.
ESC **B045819**	3M	16.10.2021	Madrigueres, El Vendrell, Tarragona, **SPAIN**. 41°11’10.3”N 1°33’26.2”E
	[9][20]	05.12.2021	Rabat, Malta.

[16600] **Common Linnet** *Linaria cannabina*

HGB **P210483**	3	04.07.2020	Újkér, Győr-Moson-Sopron, **HUNGARY**. 47°27’35.0”N 16°48’51.0”E
	[9][20]	05.11.2020	Kerċem, Gozo.
HGB **P210546**	3	15.08.2020	Újkér, Győr-Moson-Sopron, **HUNGARY**. 47°27’35.0”N 16°48’51.0”E
	[9][20]	03.11.2020	Dingli, Malta.
HGB **K135461**	3	08.01.2011	Tömörd (Madárvárta), Vas, **HUNGARY**. 47°21’23.0”N 16°40’4.0”E
	[9][20]	06.11.2020	Għarb, Gozo.
HGB **P291333**	3	20.06.2020	Völcsej, Győr-Moson-Sopron, **HUNGARY**. 47°29’42.0”N 16°45’27.0”E
	[9][20]	28.10.2020	Wardija, Malta.

Malta-ringed birds recovered abroad

[00462] **Yelkouan Shearwater** *Puffinus yelkouan*

MLV **EE02571**	3J	01.07.2014	L-Irdum tal-Madonna, L-Aħrax, Mellieħa. 35°59’37.5”N 14°22’18.1”E
	[2][01]	04.12.2022	Iztuzu Plaji, Maraş, Muğla, **TURKEY**. 36°47’38.8”N 28°37’01.5”E

[05010] **Little Stint** *Calidris minuta*

MLV **S26027**	4	11.08.2016	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
	[8][20]	14.09.2017	Tres Amigos, San Fernando, Cadiz, **SPAIN**. 36°27’00.0”N, 6°12’00.0”W

[08310] **Common Sandpiper** *Actitis hypoleucos*

MLV **BV3771**	4	05.08.2013	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
	[8][20]	19.07.2019	Rz. Wisła, Góra Kalwaria 2 km SE, Mazowieckie, **POLAND**. 51°58’20.0”N 21°15’48.7”E

A13 (orange flag) added during encounter

MLV **BV2898**	4	02.07.2020	Għadira Nature Reserve, Mellieha. 35°58'12.5"N 14°20'56.4"E
	[7][28]	30.06.2022	Zasole, Malopolskie, POLAND. 49°57'23.8'' 19°11'50.8''

[05926] **Yellow-legged Gull** *Larus michahellis*

MLV **GG1221**	1	17.05.2011	Filfla Island, Malta. 35°47'14.4"N 14°24'35.3"E
	[2][01]	16.07.2011	Calabria, Reggio Calabria, Locri, **ITALY**. 38° 14'.89.0''N 16° 15' 50.54''E
MLV **GG3242**	1	17.05.2022	St Paul's Island, Malta. 35°57'54.7"N 14°24'02.2"E
	[8][32]	04.09.2022	Cetraro Marina, Cosenza, **ITALY**. 39°30'47.4"N 15°56'10.5"E

[06870] **European Turtle-dove** *Streptopelia turtur*

MLV **EE02045**	5M	06.05.2014	Kemmuna Bird Observatory, Kemmuna. 36°00'41.3"N 14°20'28.7"E
	[2][10]	02.09.2020	Toscana, Grosseto, Tenuta La Trappola, **ITALY**. 42°41'57.1"N 11°03'55.3"E

[07780] **European Nightjar** *Caprimulgus europaeus*

MLV **CC3360**	2	14.10.2015	Buskett, l/o Siġġiewi. 35°51'28.5"N 14°23'52.4"E
	[8][20]	07.05.2019	Lazio, Latina, Ventotene, P. Dell' Arco, **ITALY**. 40°47'24.2"N 13°25'06.7"E

[09920] **Barn Swallow** *Hirundo rustica*

MLV **334738**	4F	22.04.2019	Mġarr ix-Xini, Gozo. 36°01'15.0"N 14°16'10.0"E
	[2][61]	14.04.2020	Province of Rieti, Collevecchio, **ITALY**. 42°20'04.1"N 12°33'02.5"E

[10990] **European Robin** *Erithacus rubecula*

MLV **334738**	3	19.10.2019	Buskett, l/o Siġġiewi. 35°51'28.5"N 14°23'52.4"E
	[8][20]	03.04.2020	Lazio, Latina, Ventotene, P. Dell' Arco, **ITALY**. 40°47'24.2"N 13°25'06.7"E
MLV **334751**	3	19.10.2019	Buskett, l/o Siġġiewi. 35°51'28.5"N 14°23'52.4"E
	[8][20]	11.04.2020	Lazio, Latina, Ventotene, P. Dell' Arco, **ITALY**. 40°47'24.2"N 13°25'06.7"E

[11220] **Common Redstart** *Phoenicurus phoenicurus*

MLV **361705**	6	11.04.2021	Mtaħleb, l/o Rabat, Malta. 35°52'50.1"N 14°22'01.5"E
	[2][61]	22.08.2021	Langrievola, CHEVRIERES, Isère, Rhône-Alpes, **FRANCE**. 5°10'37.29"N, 5°17'0.00"E

[11870] **Common Blackbird** *Turdus merula*

MLV **CX1077**	2M	01.02.2015	Buskett, l/o Siġġiewi. 35°51'28.5"N 14°23'52.4"E
	[2][10]	06.01.2016	Calabria, Crotone, Cotronei, **ITALY**. 39°09'23.8"N 16°49'00.4"E

[12430] **Sedge Warbler** *Acrocephalus schoenobaenus*

MLV **347722**	4	29.04.2020	Salina Nature Reserve, Naxxar. 35°56'42.2"N 14°25'23.8"E
	[8][20]	03.07.2020	Ventės ragas, Šilutės r., **LITHUANIA**. 55°20'30.1"N 21°11'30.1"E
MLV **358422**	4	09.04.2021	Simar Nature Reserve, San Pawl il-Baħar. 35°56'46.4"N 14°22'53.3"E
	[8][20]	17.05.2021	Planá nad Lužnicí, Jihočeský kraj, **CZECHIA**. 49°20'1.99"N 14°43'29.33"E

[12510] **Common Reed-warbler** *Acrocephalus scirpaceus*

MLV **298429**	4	20.08.2015	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E
	[8][20]	11.05.2018	Lazio, Latina, Ventotene, P. Dell' Arco, **ITALY**. 40°47'24.2"N 13°25'06.7"E

[12750] **Common Whitethroat** *Curruca communis*

MLV **359733**	5	14.04.2021	Għadira Nature Reserve, Mellieħa. 35°58'12.5"N 14°20'56.4"E
	[6][20]	01.09.2021	Unspecified location, **LIBYA**. (captured for consumption)

[12760] **Garden Warbler** *Sylvia borin*

MLV **209127**	4	07.05.2006	Buskett, l/o Siġġiewi. 35°51'28.5"N 14°23'52.4"E
	[8][20]	30.09.2006	Menorca, Es Prat de s'Albufera des Grau, **SPAIN**. 39°56'23.5"N 4°15'04.9"E
MLV **298985**	4	12.04.2016	Għadira Nature Reserve, Mellieha. 35°58'12.5"N 14°20'56.4"E
	[8][20]	24.04.2017	Campania, Napoli, Anacapri, Cast.O Barbarossa, **ITALY**. 40°33'21.1"N 14°13'32.0"E
MLV **317014**	4	17.09.2016	Buskett, l/o Siġġiewi. 35°51'28.5"N 14°23'52.4"E
	[8][20]	27.07.2020	Rakutowo, Kujawsko-Pomorskie, **POLAND**. 52°32'07.2"N 19°13'11.9"E

[12770] **Eurasian Blackcap** *Sylvia atricapilla*

MLV **293345**	3M	21.12.2014	Rabat, Malta. 35°52’53.6”N 14°24’10.1”E
	[8][20]	25.04.2015	Kuźnica,Jastarnia, Pomorskie, **POLAND**. 54°44’29.0”N 18°33’40.0”E
MLV **309791**	2F	20.10.2016	Salina Nature Reserve, Naxxar. 35°56’42.2”N 14°25’23.8”E
	[8][20]	05.05.2019	Reifenstein, Thüringen, **GERMANY**. 51°21’16.0”N 10°21’23.0”E
MLV **287740**	4F	24.12.2018	Buskett, L/O Siġġiewi. 35°51’28.5”N 14°23’52.4”E
	[2][61]	29.05.2020	Wiener Neustadt, **AUSTRIA**. 47°48’19.9”N 16°14’24.6”E
MLV **336759**	5F	01.01.2020	Buskett, L/O Siġġiewi. 35°51’28.5”N 14°23’52.4”E
	[8][20]	04.10.2020	Żywocice, Krapkowice, Opolskie, **POLAND**. 50°27’46.2”N 17°57’45.1”E
MLV **410142**	3M	24.10.2021	Rabat, Malta. 35°52’53.6”N 14°24’10.1”E
	[8][20]	16.04.2022	Békéscsaba (Póstelek), Békés, **HUNGARY**. 46°41’0.0”N 21°12’0.0”E

[13110] **Common Chiffchaff** *Phylloscopus collybita*

MLV **26P810**	3	05.11.2016	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
	[8][20]	09.07.2017	Chlum u Třeboně (Lutová), Jihočeský kraj, **CZECHIA**. 48°59’41.6”N 14°52’49.2”E
MLV **39P192**	3	22.12.2018	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
	[8][20]	24.04.2019	Liberec (Vesec), Liberec ký kraj, **CZECHIA**. 50°43’58.7”N 15°03’41.9”E
MLV **34P853**	5	26.01.2018	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
	[8][20]	03.04.2020	Lazio, Latina, Ventotene, P. Dell’ Arco, **ITALY**. 40°47’24.2”N 13°25’06.7”E
MLV **6H306**	5	08.02.2020	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
	[8][20]	26.04.2020	Steinheidel Aue-Schwarzenberg, Sachsen, **GERMANY**. 50°28’49.0”N 12°43’08.0”E
MLV **49P123**	3	03.11.2020	Simar Nature Reserve, San Pawl il-Baħar. 35°56’46.4”N 14°22’53.3”E
	[8][20]	17.05.2021	Lomnice nad Lužnicí, Jihočeský kraj, **CZECHIA**. 49°3’48.2”N 14°43’19.63”E
MLV **44P704**	5	02.04.2020	Simar Nature Reserve, San Pawl il-Baħar. 35°56’46.4”N 14°22’53.3”E
	[8][20]	06.10.2021	Lista fyr, Vest-Agder, Farsund, **NORWAY**. 58°06’33.7”N, 6°34’01.1”E
MLV **48P425**	3	01.11.2020	Mġarr ix-Xini, Gozo. 36°01’15.0”N 14°16’10.0”E
	[8][20]	10.10.2021	Lago di Montepulciano, Siena, Toscna, **ITALY**. 43°05’54.5”N 11°55’01.7”E

[13120] **Willow Warbler** *Phylloscopus trochilus*

MLV **42P026**	4	03.04.2019	Għadira Nature Reserve, Mellieħa. 35°58’12.5”N 14°20’56.4”E
	[8][20]	12.04.2020	Lazio, Latina, Ventotene, P. Dell’ Arco, **ITALY**. 40°47’24.2”N 13°25’06.7”E
MLV **42P458**	3	06.05.2019	Simar Nature Reserve, San Pawl il-Baħar. 35°56’46.4”N 14°22’53.3”E
	[2][44]	24.05.2022	Nordland, Bodo, **NORWAY**. 67°16’46.0”N 14°25’27.0”E

[15820] **Common Starling** *Sturnus vulgaris*

MLV **CX1896**	4M	18.10.2011	Kemmuna Bird Observatory, Kemmuna. 36°00’41.3”N 14°20’28.7”E
	[0][02]	15.02.2020	Brasov County, Olt River, **ROMANIA**. 45°44’58.4”N 25°41’20.9”E

Obituary

Vincent Sammut
(1932–2021)

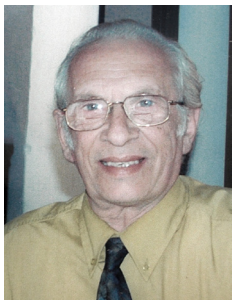
I first met Ċensu (as he was known to everyone) at his house in Birkirkara as Council Member of the Malta Ornithological Society (MOS, now BirdLife Malta) where several meetings were held in his garage. I remember walking along the corridor and noting the walls lined with showcases filled with stuffed and mounted birds – a remnant from Ċensu's past hobby, although much of the collection was acquired from third persons.

A small-time building contractor, Ċensu used his knowledge and skills to facilitate in any way possible his new passion of bird conservation and the organisation he had joined: the MOS. In the early 1980s he was instrumental in the excavation works at Għadira Nature Reserve and the construction of the MBROC birdwatching hide there.

Ċensu also trained and obtained his licence as bird ringer, and for a number of years operated a bird rescue centre for BirdLife Malta, where he cared for and rehabilitated birds that had been targets of illegal hunting.

Although Ċensu was self-taught in natural history, he acquired in-depth knowledge about the local flora and lepidoptera. Apart from birds, his other passions were palaeontology and conchology. In his later years I spent much time discussing with him various topics from birds to shells to fossils. His passion for knowledge remained one of his enduring traits.

Ċensu passed away on 16 August 2021 at the age of 88. His family later generously donated his bird collection to the National Museum of Natural History and now forms part of the National Biological collections. **JJB**



Guido G. Lanfranco
(1930–2021)

Born in Sliema on 18 October 1930, Guido Lanfranco was an indefatigable student of natural sciences who not only contributed greatly to our knowledge on Malta's natural treasures, but freely shared his wealth of knowledge with anyone willing to listen. He was educated at Stella Maris College and St Michael's College of Education. He furthered his education at the University of Malta and Dale Field Studies Centre in Wales.

His interests ranged from natural history to Maltese folklore, and this is reflected in his countless publications. The only topic he did not write about was ornithology, which he left in the capable hands of others. His milestone publications on the flora, fishes and mammals of the Maltese Islands, however, still serve as reference material to any researcher.

Guido was one of the seven founding members of the Malta Ornithological Society (MOS), along with Joseph Attard Tabone, Dominic Cutajar, Tony Dandria, Anthony Navarro, Victor Pisani and Henry Scicluna. At their second meeting Guido was elected President.

I first met Guido in 1987 when I became interested in bats. I visited him at the Junior College in Msida and we discussed the lack of studies on various topics, particularly Maltese mammals. We met on several subsequent occasions and it was through these meetings that he decided to donate his entomological collections – and later his natural history library – to the National Museum of Natural History in Mdina. His also gave his vast folklore collection to the Ethnography Museum in Birgu.

Guido passed away on 8 Septembe 2021. He was 90 years old. **JJB**

Dominic Cutajar
(1938–2023)

Born in Sliema in 1938, Dominic Cutajar's name is synonymous with the artistic circle but in his younger years he was very much involved in nature conservation: he was in fact one of the main founding members of the Malta Ornithological Society (MOS, now BirdLife Malta). The first MOS meeting was held at Cutajar's family residence in Tonna Street, Sliema on 25 January 1962. For a number of years, he was Malta's representative on the International Council for Bird Preservation (ICBP, now BirdLife International).

Cutajar was an avid bird and nature lover but he also studied art history and the history of the Mediterranean and Malta.He was inf act better known as an art historian than a naturalist. From 1981 and 1987 he was Curator of the Museum of St John's Cathedral in Valletta, and from 1987 to 2000 he also served as Curator of the Museum of Fine Arts.

Although I had met Dominic in the 1970s, it was only when I joined the ranks of the Museums Department that I got to know him. After his retirement from the Fine Arts Museum, he used to visit the National Museum of Natural History in Mdina to catalogue the Palazzo Falzon, Gollcher's Library while the Palazzo was undergoing major refurbishment. I used to enjoy listening to him talk about the setting up of MOS and the early heated but constructive debates among the founding fathers.

Dominic passed away on 25 August 2023 at the age of 85. **JJB**

Anthony Dandria Hunt
(1940–2024)

Tony Dandria was born in 1940 and was one of the founder members of the Malta Ornithological Society way back in 1962.

From the mid-1950s to 1964, Tony worked as a reporter with the *Times of Malta*, but emigrated to Australia just before Malta gained its independence. During an interview while on holiday in Malta in 2012, he recounted "I was a restless teenager and was involved with the Scouts and the Territorial Army. I felt Malta was a great place, but I felt hemmed in. We left as what was known as £10 tourists because that's all we paid to go, but we were bound to stay in Australia for two years. We were very homesick initially but looking back, I don't regret it,". While at *The Times* he wrote a fortnightly page on natural history called *Outdoor Life*. He also contributed to the MOS early circulars and cyclostyled booklets with articles about the avifauna of the Maltese Islands.

In Australia, his first job was with *The Daily Telegraph* in Sidney. He later became a wildlife officer with the Commonwealth Scientific and Industrial Research Organisation. After obtaining a university degree, he switched careers and joined the education branch of the Royal Australian Air Force. He and his wife taught English to Indonesians and Indonesian to Australians. After his retirement he was involved with Greenpeace as a volunteer with the Earth Sanctuaries Foundation.

Tony passed away in Australia on 2 July 2024, aged 83. **JJB**

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