

Pre-breeding movements and early nest visits by the Levantine Shearwater *Puffinus yelkouan* in Malta

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Abstract

Pre-breeding movements and early nest visits by the Levantine Shearwater *Puffinus yelkouan* in the Maltese Islands during the pre-breeding months (August-October) are reported. Observations at nesting sites were carried out mainly from a colony located on the northeastern side of Malta, estimated as holding about 500 pairs by Sultana & Gauci (1982). Land based observations were carried out from headlands while boat trips contributed to a considerable increase in the number of birds observed off-shore between August and October. Ringing recoveries have shown that post-fledging birds as well as an unknown number of adults disperse into the Black and Aegean seas, but some adult birds have been found to remain in the vicinity of the nesting colonies throughout the whole year. Single birds handled during the month of September were found to be in heavy wing and body moult. At the end of the moult cycle birds start to make occasional visits to the nests.

Introduction

The Levantine Shearwater *Puffinus yelkouan* is an endemic breeding species to the central and eastern part of the Mediterranean. The main breeding colonies in the Siculo-Maltese basin are well known, but information from the Aegean and eastern parts of the Mediterranean is still scant (Zotier *et al.* 1992, Handrinos & Akriotis 1997). Although only one site is known to hold over 500 pairs (Sultana & Gauci 1982), several small to medium sized colonies have been located in the Maltese Islands (Fig 1).

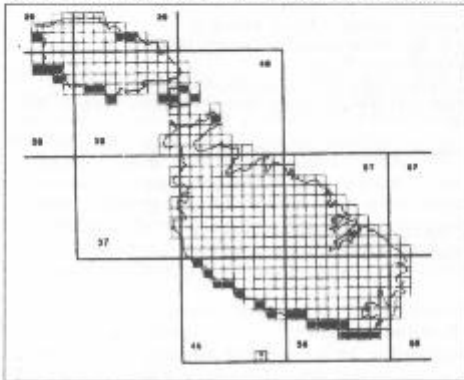


Fig. 1. Colonies of *P. yelkouan* in Malta (Sultana & Borg 2000).

Like most members of the shearwater family, *P. yelkouan* has a synchronised breeding period. Birds have been recorded visiting colonies in the first days of December (Borg & Cachia Zammit 1986-87), and egg laying has been reported as taking place in the first half of March (Galea 1990-91). However some early birds were recorded as laying in late February (pers.obs.). Chicks start to fledge from the end of June through the first week of July and colonies are deserted by the end of July (Sultana & Gauci 1982). An exceptionally late chick, aged about two and a half

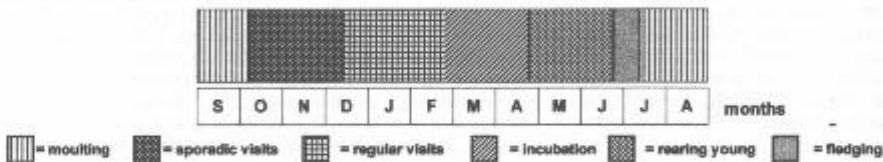


Fig. 2. Annual cycle of Levantine Shearwater.

weeks was found in a shallow burrow on 17 June 1988 at Gharb, Gozo. Unfortunately, the nest was disturbed and the bird was found dead (pers. obs.). Had it been successful, the young would have fledged in the last days of July.

Material & Methods

Land based observations were usually carried out in the early mornings as well as during the late afternoon mainly from headlands on Malta and Gozo and a series of boat trips increased considerably sightings of offshore birds. Binoculars and telescopes were used to facilitate the counting of rafting birds. Breeding colonies were visited from the first week of October to record first landfall throughout the whole breeding season till the end of July when colonies are deserted. Between July and October some of the colonies were also regularly visited while monitoring the breeding of Cory's Shearwaters *Calonectris diomedes*.

Ringling Recoveries

From 1969 to 1999, a total of 605 birds, adults as well as pulli, have been ringed from Maltese colonies. Three of these have been recovered away from territorial waters (Table 1). These recoveries show the post breeding movements undertaken by Maltese birds. The two young birds have been recovered in the northern edge of the Black Sea while an adult bird was found dead in Greek waters.

Ring No.	Age	Ringling date Recovery date	Ringling Place Recovery Place
EB68.806	4	21.05.76 18.07.76	L-Ahrax Pt., Malta. Lagonisi ca. 37°50'N;23°45'E (Attiki), Greece.
ED96.747	1	24.06.72 00.06.75	L-Ahrax Pt., Malta. nr. Sochi, Black Sea: 43°34'N;39°44'E, (Krasnodar), ex USSR.
ED46.085	1	07.07.77 30.06.78	L-Ahrax Pt., Malta. nr. Alushta : 44°42'N;34°24'E, Black Sea, (Crimea) Ukraine.

Table 1. Foreign recoveries of Levantine Shearwaters ringed in Malta (Age: 4 = adult, 1 = pullus).

Movements

The proportion of dispersion and movements varies according to age and availability of food as well as to meteorological conditions. Daily observations during the post-breeding season (August-September) of Levantine Shearwaters have shown that there is an almost total absence of birds near the Maltese Islands. Brichetti (1962) reports a similar pattern of observations in and around Italian waters.

The increased number of birds from the eastern part of the Mediterranean in the post-fledging period coincides with the absence of birds from the central Mediterranean. Handrinos and Akriotis (1997) report it as present all year round in Greek waters, while Goodman & Meininger (1989) report that in Egyptian waters the Levantine Shearwater is a scarce but regular passage migrant and winter visitor between mid-August and early May. The 'thousands' reported off Lazium in September 1981 by Fraticelli (1983) must surely refer to the Cory's Shearwater.

Observations from Maltese waters in September and October also show that adult birds undertake moult in territorial waters, but mostly do so well offshore for land-based observers to see. One adult bird in moult was found on 13 September 1994, 7km offshore, while another shearwater in partial moult was observed, this time, only 70m away from shore, on the afternoon of the 11 September 1998. (See Fig. 3 and Table 2).

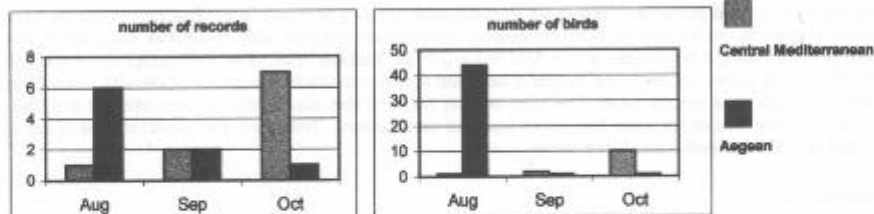


Fig. 3. Number of records and of birds observed at sea.

No. of birds	Date	Locality	Source
singles	30.08.1961	off Cyprus	Bourne & Radford 1962
singles	31.08.1961	off Baryas (Syria)	Bourne & Radford 1962
singles	01.09.1961	off Crete	Bourne & Radford 1962
12	28.08.1963	off Syria	Bourne 1964
1	08.10.1963	off Egypt (Med.)	Bourne 1964
1 (male - shot)	20.08.1973	Medit. Egypt	Goodman & Meininger 1978
1	19.08.1975	Malta	BirdLife Malta Data Bank
249	15.08-05.10. 1978	Medit. Egypt	Goodman & Meininger 1978
13	30.08.1981	Medit. Egypt	Goodman & Meininger 1978
13	26.06.1980	Medit. Egypt	Goodman & Meininger 1978
2	15.10.1987	Malta	BirdLife Malta Data Bank
2	20.10.1990	Malta	BirdLife Malta Data Bank
1	27.10.1991	Malta	BirdLife Malta Data Bank
2	28.08.1994	off E. Crete	Pers. obs.
1 (ad. Moulting)	13.08.1994	Malta	BirdLife Malta Data Bank
1	11.09.1998	Malta	Pers. obs.
2	24.10.1998	Malta	Pers. obs.
1	27.10.1998	Malta	Pers. obs.
1	30.10.1998	Malta	Pers. obs.
1	29.10.1999	Malta	Pers. obs.

Table 2. Sightings of *P. yelkouan* in the Central-Eastern Mediterranean in the non-breeding months.

Early visits to colonies

Some species of petrels and shearwaters are known to visit colonies in the non-breeding months (Warham 1990). Of the species recorded as visiting their nests outside the breeding season one finds the Little Shearwater *Puffinus assimilis*, which has been recorded on land over 10 months of the year (J. Warham pers. comm.). The Manx Shearwater *Puffinus puffinus* visits land from February to September (Harris 1966) with an exceptionally early bird reported by Alexander (*in* Brooke 1990) when a bird was heard calling in November on Skomer Island, off Wales. Lockley (1931) records an early bird on 26 January, but noted that regular visits to colonies start from late February or early March. On Iles Hyeres, in the south of France, Vidal (1965) found some individuals of *P. yelkouan* already visiting land in the beginning of November. One bird was reported as taken from a burrow by a dog in 'early autumn' from a small colony in Xaghra, Gozo (J. Attard Tabone pers. comm.).

Visits carried out in the years 1983-1999 to the largest breeding colony of *P. yelkouan* in the Maltese Islands have resulted in sporadic fresh footprints in front of nesting crevices from the third week of October. The earliest evidence of birds visiting the nest was on the night of the 27th/28th October 1998 when fresh footprints of a single bird were found in the soft earth. An increase was then noted from the third week of November when birds visited the nests on a regular basis. The local nesting habits of this shearwater, in deep shallow crevices, do not allow any accessible nests that might facilitate observations. Therefore, the length of time spent in the nest during these early visits is not known.

Conclusions

Direct observations have shown that in the post-breeding months, an unknown number of adult birds remain in territorial waters. Bird ringing on the other hand shows that some adult birds disperse eastwards into the Aegean and the immature birds fly through the Bosphorus and 'winter' in the Black Sea.

In the years 1983 to 1999, the Levantine Shearwater was never recorded on land between August and September. This absence of birds may be explained by the fact that in these two months, when in moult, birds remain offshore. Birds start to venture closer to land with sporadic landfall in October. Then they increase by the third week of November. Most summer sightings of birds in flight at sea have been recorded during calm weather. An increased number of both sightings and birds during or immediately after strong north-westerly winds suggest that offshore birds are blown in closer to land.

In the Maltese Islands then, the Levantine Shearwater has been recorded on land for almost ten months of the year.

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