Review of the status of Spectacled Warbler *Sylvia conspicillata* in Cyprus, and evidence of its dispersal and migration

COLIN RICHARDSON

The nominate race of Spectacled Warbler *Sylvia c. conspicillata* breeds mainly in southwest Europe (including Corsica, Sardinia and Sicily) and northwest Africa; the European breeders are almost completely migratory to Africa while the African breeders are partly migratory (Shirihai *et al* 2001). There is also an isolated relic population in the East Mediterranean region, including Cyprus, southern Lebanon, southern Syria, western Jordan, Israel and northern Sinai (Andrews 1995, Blair *et al* 2016, Clements 2000) and southeastern Turkey (Kirwan 2008). The Levant population is mainly resident or disperses locally, though some migrate south to winter in Egypt (Sinai, north coast, Western desert, Nile valley, Goodman & Meininger 1989, Shirihai 1996). Previously thought to be a vagrant to Turkey, breeding populations were recently discovered at an altitude of *c*1700 m in southeast Anatolia, where the population is believed to be migratory (Welch & Welch 2004) and in Hatay province (Gül & Atahan 2011, Kirwan *et al* 2014).

In Cyprus (Figure 1), Spectacled Warbler favours open drier areas, nesting in areas of low scrub, including on higher plateaux and summits. In the west of Cyprus much of this higher habitat is being cleared to make way for housing and industrial development and summer bush fires destroy large areas of suitable habitat annually (CR). Records show that numbers of Spectacled Warblers are declining as a result. It is very thinly distributed at upper elevations, and is rarely found above 1000 m. However it does occur in quite high densities in suitable habitat, although is virtually absent in other apparently suitable

Figure 1. Island of Cyprus showing location of bird migration sites.

areas. It also inhabits salicornia bushes and scrub around salt lakes and marshes. It is very common in southeastern Cyprus where it breeds at quite high density. Nest-building occurs February–March, eggs are laid February–April (Flint & Stewart 1983, 1992, CR) and family parties are widespread April–June. While nesting, it is active on breeding territory mid March–early May, becoming rather elusive late June–late July.

The status of breeding Spectacled Warblers in Cyprus is uncertain and published opinion is varied. They are numerous in their breeding areas all year (Stewart & Christensen 1971, Flint & Stewart 1983, 1992, CR) but Stewart & Christensen (1971) also considered that some were migratory, basing this on numerous sightings away from breeding areas in spring and a catch of 60 near the southeast coast spring 1968 "indicating a return movement of birds wintering off the island". These 1968 findings were later published by Horner & Hubbard (1982) who also found that 62.5% (of an unspecified number) of birds aged by them were fledged juveniles of the local breeding population. They also found no obvious arrival pulse, as shown by other returning Cyprus breeders *eg* Cyprus Warbler *Sylvia melanothorax*, and concluded that their results did not show a return movement. Shirihai *et al* (2001) described the Cyprus breeding population as partly migratory though did not cite any supporting evidence. Flint & Stewart (1983, 1992) listed Spectacled Warbler as resident only, and this status has been followed in subsequent Cyprus Bird Reports/Annual Checklists to the present day.

REVIEW OF STATUS IN CYPRUS AND DISCUSSION

It is much more likely that Spectacled Warbler is migratory in Cyprus, matching its status throughout most of its range. Climate change (including a steady decrease in annual rainfall, which more quickly affects the ecology of a semi-arid country like Cyprus), loss of habitat and other pressures can influence whether a species shows partial migration (Chapman *et al* 2011). Another reason for possible partial migration may be that in some years its favourite food source is unavailable, and this may be subject to annual weather conditions, or biological life cycles (A McArthur pers comm). Indeed, any partial migration of Spectacled Warbler could apply only to certain geographic populations on the island, some populations being totally sedentary while others migrate, and even then some may not migrate every year. It is recommended that more studies are done to determine these aspects involving several populations, their food sources and over several years, and comparing with changing trends in summer/winter populations. All published sight records since 1993 were collated (Figure 2) showing Spectacled Warbler to be present all year, although numbers appear to fluctuate considerably. The dramatic spring peak on the histogram (Figure 2) is mostly due to the increased activity of birdwatchers then and by the birds' breeding activity. However, the literature (Cyprus Ornithological Society (1957), Richardson 2005–2012) lists a number of spring records from Paphos lighthouse (Figure 1), a south coast migration 'hotspot' where Spectacled Warbler does not breed and where there are no known breeding sites within 5 km. Apart from the one on 26 February, all seven sightings are of singles 31 March–18 April, and suggest inward migration: 26 February 1993, 1–4 April 1996, 9 April 1997, 15–18 April 1999, 31 March 2005, 18 April 2005 and 10 April 2010. It is unlikely these would be passage migrants because Flint & Stewart (1983, 1992) found no evidence of this as "there are no known breeding areas north of Cyprus" which might be evacuated in winter. The most likely explanation is that these spring sightings at Paphos lighthouse are of migrant breeders returning to Cyprus, where breeding activity is at its peak March–April. The dates would also suit migrant breeders nesting in Turkey, where young are in the nest from late April in Hatay province, and from late May above 1600 m in southeast Anatolia. However, migrants returning to these only known breeding sites in Turkey, which are some distance east of Cyprus, would surely

follow a more easterly land route up through Sinai and the Levant rather than through Cyprus. The Cyprus population of Spectacled Warbler is relatively small, less than one tenth that of Cyprus Warbler (BirdLife International 2004) so the numbers of any returning migrants may be too small for a pulse to be detected amongst the records of the numerous local breeders.

The autumn peak activity of Spectacled Warbler (Figure 2) is much less than in spring and is partly due to an increase in birdwatching and bird census activity. However an increase due to migration cannot be ruled out, as an examination of individual records indicates that Stewart & Christensen (1971) and Shirihai *et al* (2001) may have been correct in suggesting that some birds winter off the island. Generally most autumn passerine nocturnal migrants (*eg* warblers, flycatchers and shrikes) occur along the south coast, forming concentrations behind the main departure points in the southeast, including at cape Greco (Figure 1). Whereas in spring, migrants from the Levant or Egypt arrive on a broad front (Flint & Stewart 1983, 1992) and are thus less easy to detect; from the records presented here this may be the case with this species also. The Spectacled Warbler is not known to be a spring or autumn migrant through Akrotiri on the south coast (P Flint pers comm) but given its distribution on the island (primarily in the centre and southeast) and the prevailing northwesterly winds in late summer and early autumn over the eastern Mediterranean (Department of Meteorology, Cyprus) any autumn departure would probably be from the southeast. Spectacled Warbler is a common breeder near the southeast coast making a departure from there difficult to detect, but results from a study of autumn migration using standardised monitoring criteria, at cape Greco in 2005 (Roth 2008, T Roth pers comm), may indicate such a departure (Figure 3). From 28 August–29 October daily counts regularly registered over 40 Spectacled Warblers, occasionally 60 or more. This data is of particular value because it lacks the spring and autumn peak observation bias present in casual observations; it shows an early–mid October increase with the highest counts of 80 and 85 birds on 8 and 9 October respectively. Interestingly this early October

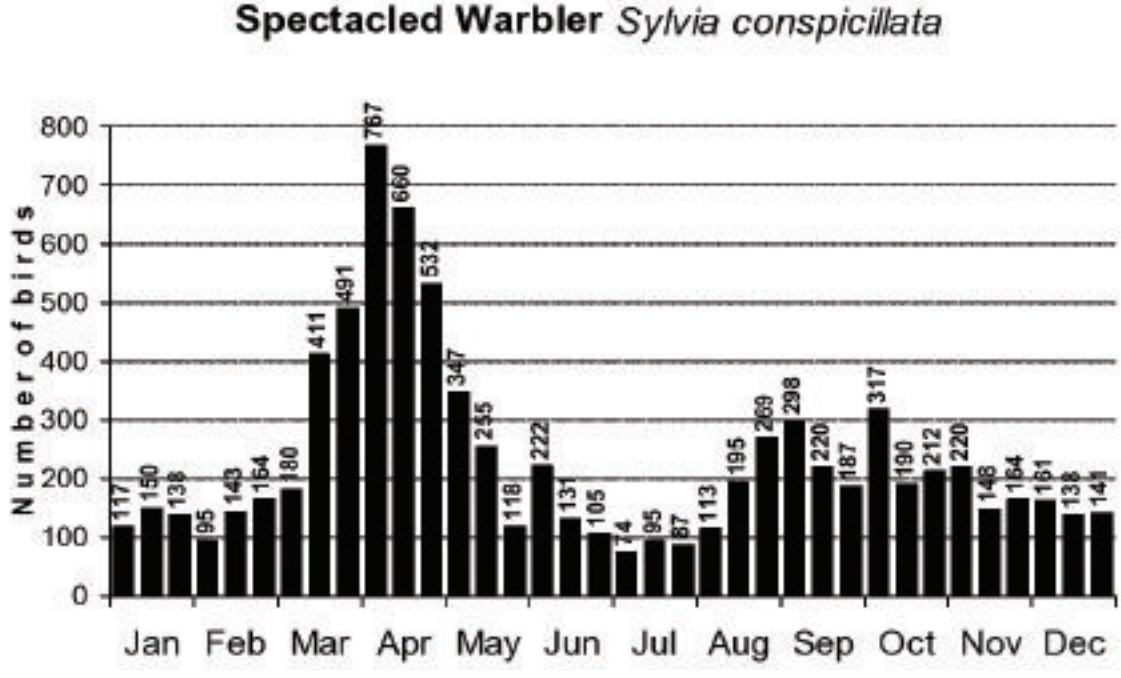

Figure 2. Spectacled Warbler *Sylvia conspicillata*: all records from Cyprus 1993–2015 by month. Compiled from 3130 records submitted to Cyprus Ornithological Society and BirdLife Cyprus recorders and taken from annual Bird Reports. Months are divided into thirds (dectiles). Each vertical bar indicates the total number of birds recorded in that dectile, 1993–2015.

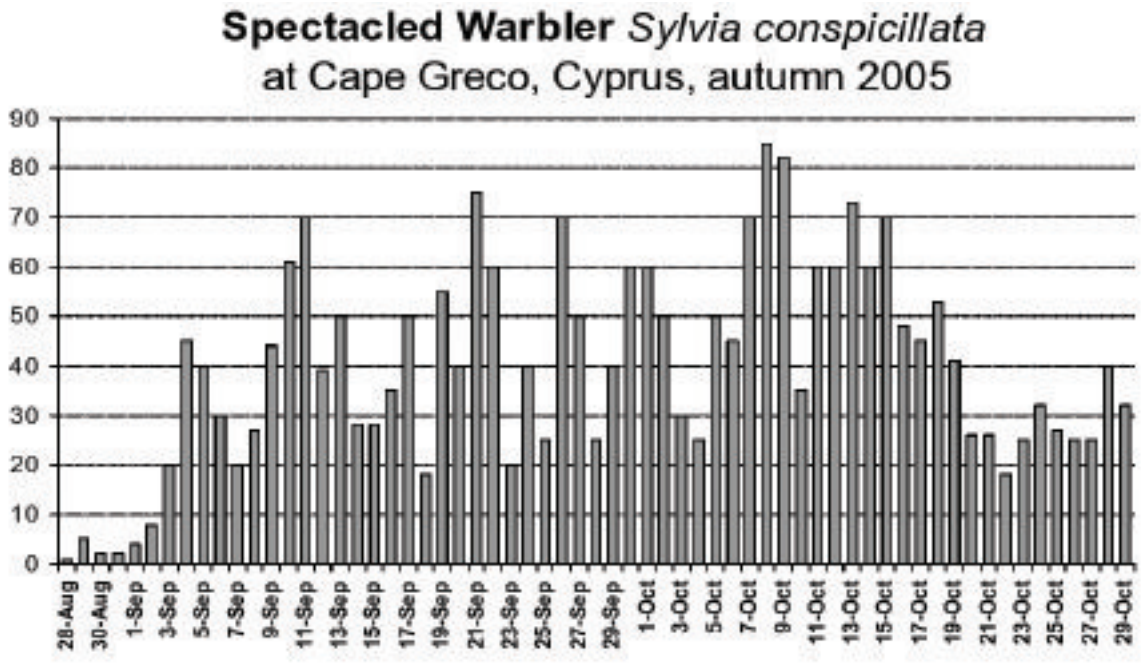

Figure 3. Daily counts of Spectacled Warbler *Sylvia conspicillata* at cape Greco, southeast Cyprus, 28 August–29 October 2005 (T Roth pers comm).

date coincides with the peak autumn passage of Sardinian Warbler *Sylvia melanocephala* in Cyprus (Richardson 2014). The Sardinian Warbler is another Mediterranean breeding *Sylvia* warbler which is also a partial migrant (Shirihai *et al* 2001). More significantly, in Israel, where Spectacled Warbler occurs in winter and to some extent on passage, migrants arrive from the second week of October into November (Shirihai 1996), so this timing suggests that Cyprus, and to a lesser extent Turkey, may be the country of origin of some of these birds.

There are occasional autumn/winter records away from known breeding areas including the Paphos plain on the south coast (a well-watched area, but with unsuitable habitat) where ones and twos have been seen 10 times since 2008 (Richardson 2009–2012, Stylianou 2013–2014, 2016) namely singles between 1 November and 15 January, and two on 18 December 2011. These records suggest some limited post-breeding dispersal, probably of first-year birds, or even breeding opportunists visiting the area, but not remaining after finding the habitat unsuitable.

Very little ringing data for Spectacled Warbler has been collected in Cyprus in recent years (less than five birds are ringed annually, often none at all) and there are no ringing recoveries in the last 50 years. However it would take a large number of ringed birds to make the chances of recovery likely. Jeal (1970), whose study included biometric data, suggested that Cyprus Spectacled Warblers have affinities with those found in North Africa (Flint & Stewart 1983, 1992). A study using tracking devices and geolocators would eventually determine what proportion migrates, and provide its wintering locations. More dedicated observations of the species on several known breeding territories are needed to determine its post-breeding movements and if there is any significant variation in numbers throughout the year. More ringing should be done especially in their breeding areas.

CONCLUSIONS

It seems Spectacled Warblers are mainly resident and sedentary in Cyprus, but some probably do winter off the island. There is evidence of limited post-breeding dispersal but

not of any significant passage. However there is some evidence that some of the Cyprus population are partial migrants: this species is a partial migrant in Turkey, the Levant and Israel, where the climate and conditions are generally similar. The strong peaks in Figures 2 and 3 suggest some spring arrival and a concentrated departure. Some autumn migrants found on the coast of Israel are possibly from Cyprus.

ACKNOWLEDGEMENTS

This short paper could not have been written in its current form without the time and effort spent by Peter Flint in researching references and checking and commenting on earlier drafts. Alison McArthur advised in other ways regarding breeding biology and food preferences. I am very grateful to both for their help. Reviewers also suggested a number of improvements.

LITERATURE CITED

Andrews, IJ. 1995. *The Birds of the Hashemite Kingdom of Jordan.* Andrews, Musselburgh, UK.

Blair, M, S Preddy & AA Alenezi. 2016. *Ornithological Society of the Middle East Regional List (ORL)*. OSME, Tring, UK.

BirdLife International. 2004. *Birds in Europe: population estimates, trends and conservation status*. Cambridge, UK.

Chapman, BB, C Brönmark, J-Å Nilsson & L-A Hansson. 2011. The ecology and evolution of partial migration. *Oikos* 120: 1764–1775.

Clements, JF. 2000. *Birds of the World. A Checklist*. Pica, Robertsbridge, UK.

Cyprus Ornithological Society (1957). 1990–2003. *Annual Reports.*

Flint, PR & PF Stewart. 1983, 1992. *The Birds of Cyprus*. British Ornithologists Union, Tring, UK.

Goodman, SM & PL Meininger (eds). 1989. *The Birds of Egypt*. Oxford University Press, NY.

Gül, O & M Atahan. 2011. A new breeding location of Spectacled Warblers *Sylvia conspicillata* in Turkey. *Sandgrouse* 33(1): 4–6.

Horner, KO & JP Hubbard. 1982. An analysis of birds limed in spring at Paralimni, Cyprus. *Cyprus Ornithological Society (1970) Report* 7: 54–104.

Jeal, PEC. 1970. Spectacled Warbler breeding in Cyprus. *Bird Study* 17: 338–340.

Kirwan, GM, KA Boyla, P Castell, B Demirci, M Özen, H Welch & T Marlow. 2008. *The Birds of Turkey*. Christopher Helm, London.

Kirwan, GM, M Özen, M Ertuhan & A Atahan. 2014. Turkey Bird Report 2007–2011. *Sandgrouse* 36(2): 146–175.

Richardson, C (ed). 2005–2012. *Cyprus Bird Reports 2004–2011.* BirdLife Cyprus, Nicosia.

Richardson, C. 2014. The status, frequency and abundance of passerine passage migrants and seasonal visitors in Cyprus 2003–2013. *Sandgrouse* 36(1): 197–236.

Roth, T. 2008. Outward (autumn) bird migration at the Southeastern Peninsula and Cape Greco, Cyprus: the phenologies of regular migrants. *Sandgrouse* 30(1): 77–89.

Shirihai, H, G Gargallo & AJ Helbig. 2001. *Sylvia Warblers.* Christopher Helm, London.

Shirihai, H. 1996. *The Birds of Israel.* Academic Press, London.

Stewart, PF & SJ Christensen. 1971. *A Check List of the Birds of Cyprus 1971*. Stewart, Plymouth, UK.

Stylianou, J (ed). 2013–2014, 2016. *Cyprus Bird Reports 2012–2014.* Birdlife Cyprus, Nicosia.

Welch, G & H Welch. 2004. Spectacled Warbler *Sylvia conspicillata*: a new breeding species for Turkey. *Sandgrouse* 26(1): 55–58.

Colin Richardson, Petravounos 10, 8520 Marathounta, Paphos, Cyprus. richar@cytanet.com.cy