# PALEARCTIC MIGRANTS AND WINTERING SITE FIDELITY AT LILONGWE, MALAWI

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## INTRODUCTION

The status of most palearctic migrant passerines in Malawi is fairly accurately summarised in Benson & Benson (1977). The narrow confines of the country provide both wintering grounds and a passage itinerary for the majority of palearctic passerines occurring in southern Africa although some, such as Lesser Grey Shrike *Lanius minor*, occur only on passage, mainly northwards. The work of Mrs D B Hanmer through mistnetting at Nchalo, near the southern tip of Malawi, has greatly enhanced our knowledge of the status of palearctic migrants in the area, especially for such species as Basra Reed Warbler *Acrocephalus griseldis*, and she has published numerous papers on the subject. Of particular interest to me were her records of winter site fidelity, or *ortstreue*, (Hanmer 1989).

Situated between east and southern Africa, Malawi is a narrow country on a north-south axis. Between 9°S and 14°S, it lies on the west side of the Rift Valley, the floor of which at that point is covered by Lake Malawi. Further south, from 14°S to 17°S Malawi straddles the southern end of the rift. The Central African *Brachystegia* woodlands dominate most of the area west of the rift although around Lilongwe, where the soils are more fertile, they give way to open-canopy *Piliostigma/Acacia/Combretum* woodland which has a dense, thicket-type understorey. In modern times most of this has been cleared or degraded as a result of human settlement and agricultural development although there are still some remnants such as the Lilongwe Nature Sanctuary.

Of the palearctic passerines that visit such habitat in Malawi, Willow Warbler *Phylloscopus trochilus* and Garden Warbler *Sylvia borin* are common canopy species and Icterine Warbler *Hippolais icterina* is rather less so; Spotted Flycatcher *Musciapa striata* is fairly common, hawking in the mid-stratum and European Marsh Warbler *Acrocephalus palustris* is probably commoner than thought, skulking in the dense lower stratum. In view of the almost total clearance or degradation of habitat in this part of Malawi it is now impossible to ascertain whether or not other palearctic passerines would have been recorded in any great numbers had there not been such human interference.

## THE RINGING SITE

In December 1990, my then ringing partner, Mark Mallalieu, had been investigating a local marsh on the edge of the city of Lilongwe for rallids when he noticed that the adjoining area of degraded woodland was thick with palearctic passerines. In view of its close proximity to home, it seemed like an ideal site for regular mistnetting and this was the start of Chankhandwe Dambo as a ringing site. Dambo is a local Chichewa term for a marsh or vlei, either permanent or seasonally-inundated. Having completed a third season of ringing palearctic passerines I feel that it is time to record results to date.

The Chankhandwe Dambo ringing site is precisely on 14°00'S, 33°45'E, on the southwest edge of the city of Lilongwe, at an altitude of 1 050 m (see Map 1). It is within a large (thankfully) under-utilized cattle-holding ground. The original vegetation of the area would have been typically mixed woodland, dominated by *Acacia polyacantha, Combretum zeyeri, Piliostigma thonningii* and *Kigelia africana*, with a dense understorey. The terrain is fairly level, dissected by the Chankhandwe stream and its minor tributaries which rise in wet, grass dambos and flow slowly southwards through dense reedbeds (see Map 2).

At some time in the last seventy-five years the area must have been cleared for agricultural purposes, as evidenced by drainage channels and barbed wire enclosures, and for part of the time it was occupied by village settlements. Coupled with the current regime of grazing and regular cropping of firewood, the effect of human settlement on the habitat of the area has been the substantial reduction of the woodland canopy and the invasion of a number of exotic trees and bushes such as Cedrella *Toona ciliata*, *Lanata* sp. and *Tithonia diversifolia*. The latter originates from Mexico, was introduced to Malawi presumably in the early part of this century and is now well-established thoughout the country, particularly favouring seepage-lines on slopes. At Chankhandwe it favours the moist edges of the dambos where it develops into dense clumps in the rains (January-March), dying back each dry season to leave bare, hollow, woody stems. These remain through to around February when they decompose whilst the new season's growth develops. The plant appears to play an important role in attracting palearctic migrants to the site, particularly Thrush Nightingale *Luscinia luscinia* and *Acrocephalus* warblers.

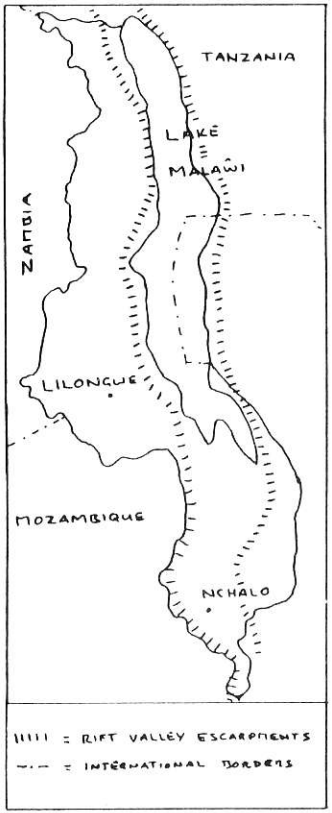
## RINGING ACTIVITIES

We commenced ringing activities at the site on 4th January 1991 and completed four full-day sessions by 9th February; mistnetting recommenced at the beginning of the following season on 16th November. The last session in the 1992-1993 season was on 28.02.93. Each session, between five and eight 9-metre mistnets were set in an area of dense vegetation alongside the dambo; often they were set at dusk, then furled and re-opened before dawn the following morning. On the first few occasions the nets were kept open all day but as it soon became clear that the activities of the palearctics quietened down after about 10h00, the sessions soon became mornings-only.

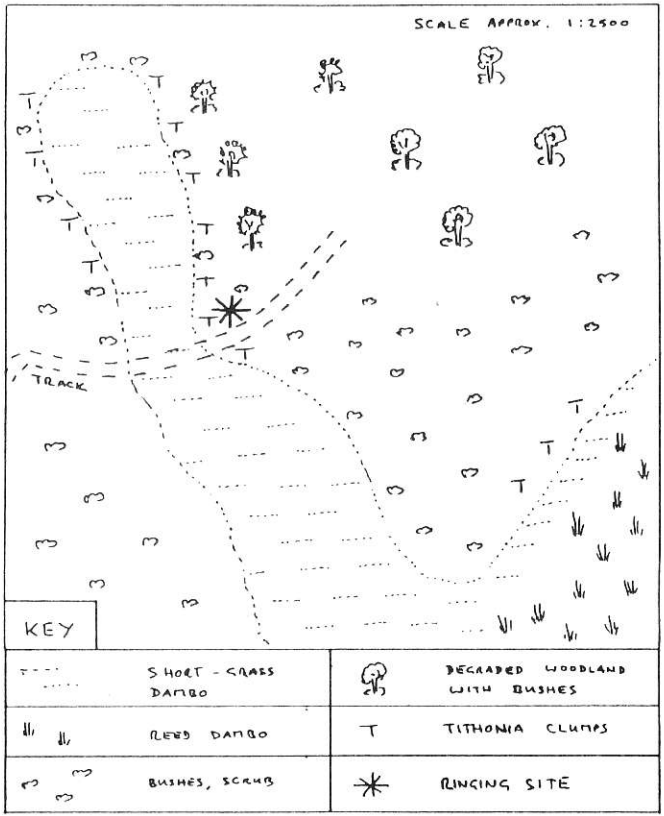
Table 1 summarises the number of palearctic passerines ringed to date. At the end of the first season, 70 individuals of six species had been ringed (excluding retraps): this is admittedly a tiny number by ringing station standards but the site appeared to have potential for more extensive work. By the end of February 1993, the number ringed had been increased to 218, plus 30 retraps, in the course of a total of 126 hours of netting. It is hoped that the study will be continued for another two seasons during which improved techniques may enable a large catch-rate. The figures exclude a greater number of Afrotropical birds ringed in the course of the sessions.

## WINTERING SITE FIDELITY

The first records of returning Garden Warblers and Willow Warblers in Malawi are usually in late September/early October, whilst others such as European Marsh Warbler, Great Reed Warbler *A. arundinaceus* and Redbacked Shrike *Lanius collurio* arrive a month or so later.




**Map 1**. Malawi




**Map 2**. Chankhandwe Dambo Ringing Site

**Table 1.** Number of individual palearctic passerines ringed, by month, January 1991 to February 1993

| Species | 1990-1991 | | | 1991-1992 | | | | | | 1992-1993 | | | | | Overall Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan | Feb | **Total** | Nov | Dec | Jan | Feb | Mar | **Total** | Nov | Dec | Jan | Feb | **Total** | |
| No. hours netting | 31 | 6 | **37** | 26 | 11 | 5 | 11 | 3 | **56** | 4 | 10 | 4 | 15 | **33** | **126** |
| Thrush Nightingale | 6 | | **6** | | 3 | 1 | | 3 | **7** | | 6 | | 3 | **9** | **22** |
| Garden Warbler | 32 | 8 | **4** | 11 | 11 | 15 | 9 | 6 | **52** | | 17 | 3 | 5 | **25** | **117** |
| Icterine Warbler | | | | | | | | | | | 1 | | | **1** | **1** |
| River Warbler | | | | | | | | | | | 2 | | | **2** | **2** |
| Great Reed Warbler | 5 | | **5** | | 2 | 1 | | | **3** | | 8 | | | **8** | **16** |
| Basra Reed Warbler | | | | | | | | | | | | | 1 | **1** | **1** |
| European Reed Warbler | | | | | | | | | | | | | 1 | **1** | **1** |
| European Marsh Warbler | 15 | | **15** | 1 | 3 | 6 | 2 | | 12 | | 11 | 4 | 6 | **21** | **48** |
| European Sedge Warbler | 1 | | **1** | | | | | | | | | | | | **1** |
| Willow Warbler | | | | | 1 | | | | **1** | | 1 | | | **1** | **2** |
| Redbacked Shrike | 3 | | **3** | 2 | 1 | | | | **3** | | 1 | | | **1** | **7** |
| Total birds ringed | 62 | 8 | **70** | 14 | 21 | 23 | 11 | 9 | **78** | 0 | 47 | 7 | 16 | **70** | **218** |

The first evidence of wintering site fidelity was on 17th November when Garden Warbler AB 83256 was retrapped, having been ringed in the same clump of *Tithonia* on 26th January. Over the following months and again in the 1992-1993 season, we carried on mistnetting as often as possible; Table 1 indicates the number of hours of mistnetting activity by month. Figure 1 shows, by month, the numbers of birds caught per hour. A peak is apparent in December/January which is to be expected if the majority of migrants caught at the site are actually wintering in the area rather than merely passing through.

Table 2 provides an indication of the number of palearctic passerines ringed and retrapped in the short period of study to date. Under each species, the first column is the total number ringed in three seasons. This is followed by the number retrapped the same season, having been ringed at least one week earlier, hence showing a tendency either to winter in the area or to stop over at the site on passage. The last two columns show the number of individuals retrapped one or two years after the season of ringing (see comments below table). However, in order to draw any reasonable conclusion from percentages of possible retrapping of birds ringed in previous seasons, it is necessary to exclude from the totals those birds ringed in the same year. Table 3 shows these percentages, adjusted accordingly.

It would be premature to draw many conclusions after only three seasons of ringing activity. The total number of palearctic passerines ringed at Chankhandwe is a mere 218 and only 148 of those were ringed in the first two years, hence having been possible candidates for retrapping. However, it is too tempting not to compare results to date with those of Hanmer (1989), which clearly illustrates percentage returns of palearctic passerines at Nchalo in southern Malawi, established over a period of 16 years. The extraordinary statistic provided by two out of three Redbacked Shrikes being retrapped the following season at Chankhandwe contrasts with that species apparently being the least faithful of all palearctic passerines to Nchalo as a wintering site. Utilising the same method as Hanmer in calculating percentage return, the figure would be 50% compared with 3,4% at Nchalo. Conversely, there have been no retraps of Great Reed Warbler in subsequent years at Chankhandwe, whereas Hanmer recorded a 9,6% return. Only one individual, Garden Warbler AB 83251, was trapped in all three seasons, having been ringed on 19.01.91, retrapped on 23.11.91 and again on 26.12.92.

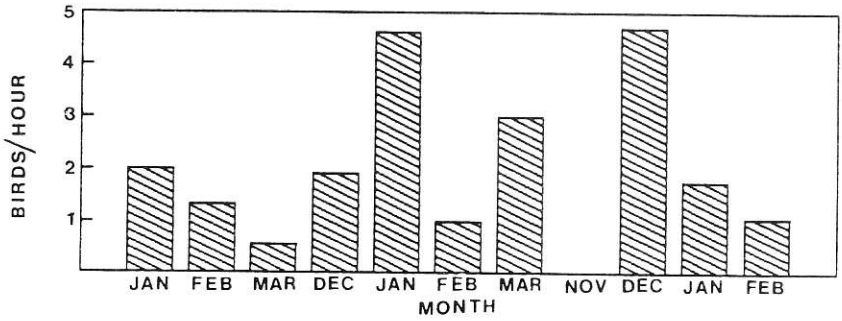



**Figure 1.** Capture rate in relation to effort: January 1990 – March 1993

**Table 2.** Number of individual palearctic passerines ringed and recaptured January 1991 to February 1993

| Date | Thrush Nightingale | | | | Garden Warbler | | | | Great Reed Warbler | | | | European Marsh Warbler | | | | Redbacked Shrike | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * | n | 0y | 1y | 2y | n | 0y | 1y | 2y | n | 0y | 1y | 2y | n | 0y | 1y | 2y | n | 0y | 1y | 2y |
| 1990-1991 | 6 | 1 | | | 40 | | | | 5 | | | | 15 | 1 | | | 3 | | | |
| 1991-1992 | 7 | 1 | | | 52 | 3 | 5 | | 3 | | | | 12 | 3 | | | 3 | 1 | 2 | |
| 1992-1993 | 9 | | 1 | | 25 | | 7 | 2 | 8 | | | | 21 | | 1 | | 1 | 1 | 1 | |
| Totals | 22 | 2 | 1 | 0 | 117 | 3 | 12 | 2 | 16 | 0 | 0 | 0 | 48 | 4 | 1 | 0 | 7 | 2 | 3 | 0 |

* n = no. ringed; 0y = same-season retraps; 1y & 2y = subsequent season retraps

**Table 3.** Percentages of palearctic passerines retrapped in subsequent seasons November 1991 to February 1993

| Species | 1991-1992 | | | 1992-1993 | | |
|---|---|---|---|---|---|---|
| | No. ringed previously | No. retrapped | percentage of poss. retraps | No. ringed previously | No. retrapped | percentage of poss. retraps |
| Thrush Nightingale | 6 | | 0,0 | 13 | 1 | 7,7 |
| Garden Warbler | 40 | 5 | 12,5 | 92 | 9 | 9,8 |
| Great Reed Warbler | 5 | | 0,0 | 8 | | 0,0 |
| European Marsh Warbler | 15 | | 0,0 | 27 | 1 | 3,7 |
| European Sedge Warbler | 1 | | 0,0 | 1 | | 0,0 |
| Redbacked Shrike | 3 | 2 | 66,7 | 6 | 1 | 16,7 |

## OTHER RETRAPS AND FURTHER EVIDENCE OF SITE FIDELITY

Another Garden Warbler was ringed in a domestic garden, about a kilometre distant, on 20.01.91 and retrapped at Chankhandwe on 21.12.91, indicating a greater extent of the wintering-ground to which they may be faithful. Perhaps surprisingly, no Spotted Flycatchers have been caught at Chankhandwe and few are to be seen, the degraded woodland habitat evidently being unsuitable. However, three individuals have been trapped at the same nearby garden over the last three years. AB 83292 was ringed on 21.03.91 and retrapped on 02.02.92 whilst AB 83003 was ringed on 27.01.90 and retrapped for the first time on 24.12.92 (and again on 21.01.93), three seasons on. In another part of Lilongwe, houses have large, open lawns which attract Yellow Wagtails *Motacilla flava* of several races. On 24.03.91, an adult male of the nominate race was trapped and ringed, the only Yellow Wagtail I have ringed to date, and yet it was retrapped on 01.02.92, thus providing a 100% return rate.

## EVIDENCE OF WINTERING

Benson and Benson (1977) assume that all the species listed in the tables actually winter in Malawi and this is not unreasonable. However, other than Hanmer's work there has been little evidence hitherto proving the extent of actual site fidelity, as opposed to a presumption of general wandering around the area.

**Table 4.** Percentages of palearctic passerines retrapped in the same season November 1991-March 1992 and November 1992-February 1993

| Species | Total ringed | No. retrapped | % possible retraps |
|---|---|---|---|
| Thrush Nightingale | 22 | 2 | 9,1 |
| Garden Warbler | 117 | 3 | 2,6 |
| Icterine Warbler | 1 | | 0,0 |
| River Warbler | 1 | | 0,0 |
| Great Reed Warbler | 16 | | 0,0 |
| Basra Reed Warbler | 1 | 1 | 100,0 |
| European Reed Warbler | 1 | | 0,0 |
| European Marsh Warbler | 48 | 4 | 8,3 |
| European Sedge Warbler | 1 | | 0,0 |
| Willow Warbler | 1 | | 0,0 |
| Redbacked Shrike | 7 | 2 | 28,6 |

In Table 2, the first column under each species indicates numbers of birds retrapped in the same season, where ringed not less than seven days previously. Table 4 puts these records in perspective through percentage retraps on the same basis used in the previous section. Again, the limitations imposed by the small sample number is recognised but it will be interesting to see results from years to come if this study can be continued.

## UNUSUAL RECORDS

The Chankhandwe site has produced several unusual records of palearctic passerines. On 26.12.92, two River Warblers *Locustella fluviatilis* are trapped; whilst there have only been about twelve previous records from Malawi, they were not entirely unexpected as four had been trapped elsewhere in Lilongwe in December 1991 (Medland 1992). More surprising was a Basra Reed Warbler *Acrocephalus griseldis* trapped 14.02.93 and retrapped on 21.02.93. Whilst no less than 112 were trapped at Nchalo between 1973 and 1989 (Hanmer 1989), there has been only one other record in Malawi (Benson & Benson 1977) at Mangochi, also from the Rift Valley. Interestingly, a massive 855 have been ringed at Ngulia, Kenya between 1969 and 1990 (Backhurst & Pearson 1992). Doubtless the species is not as uncommon throughout Malawi as records to date might imply; Although the main wintering range is probably southeast of Malawi, greater ringing activity would produce more records. A further interesting record on 21.02.93 was that of a European Reed Warbler *A. scirpaceus*, another species evidently under-recorded in Malawi. Again, this was the first record away from the Rift Valley.

The ringing and retrapping of Afrotropical migrants at Chankhandwe has by no means been ignored and some interesting results have been obtained. Details of these will be published at a later date.

## ACKNOWLEDGMENTS

This paper would not have been possible without the initial enthusiasm of my erstwhile ringing partner, Mark Mallalieu, whose idea it was originally to start weekend mornings at 4 am in a soggy dambo. Mrs Hanmer's series of papers on her ringing effort at Nchalo were a source of inspiration and I wish to thank her for commenting on an earlier draft. Dr Tony Thompson and my wife, Claire, gave invaluable help at the ringing site.

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