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AFRING NEWS: MIGRATION

FENNOSCANDIAN-RINGED WESTERN OSPREY RECOVERY, INGULA, KWAZULU-NATAL, SOUTH AFRICA

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Overview of Western Osprey Palearctic migration

The Western Osprey *Pandion haliaetus,* has an extensive distribution and associated natal breeding grounds across the northern Holarctic region (Osterloff 1977; Kjellen et al*.* 1997). However, within an African context, the Western Osprey is a long distance non-breeding Palearctic migrant to predominantly tropical West Africa, but extending into southern Africa (Kjellen et al*.* 1997). Palearctic breeding grounds comprise largely the Fennoscandian (or Fenno-Scandinavian) region, including Norway, Sweden, Finland and parts of Russia. Osprey are noted as piscivorous, feeding on a wide variety of fish across both freshwater and marine habitats (Hakkinen 1978; Brown et al*.* 1982; Boshoff 1997). Dietary analysis of prey remains from birds in their wintering grounds in South Africa, revealed a mean fish prey weight of 200 – 500 g (Brown et al. 1982). Similarly, analysis of prey items from Swedish birds in their natal breeding grounds revealed a mean prey weight of 150 – 300 g and mean prey length of 24 – 36 cm (Hakkinen 1978).

Migration strategies utilised by osprey include a fly-and-forage strategy, combined with that of a traditional stopover strategy (Strandberg & Alerstam 2007). Fly-and-forage migration behaviour includes the replenishment of energy through foraging whilst flying along a designated migration route. This method is, however, habitat restricted and foraging type specific, as it requires open habitats and the ability to forage in-flight (Strandberg & Alerstam 2007). Alternatively, stopover behaviour involves intermitting migration temporarily to utilise a given food source, such as lakes, estuaries, large rivers and coastlines (Kjellen et al. 1997; Hake et al. 2001; Strandberg & Alerstam 2007). The ability to utilise a fly-and-forage strategy can be favourable in terms of reducing the time required to reach wintering grounds, but numerous studies suggest that a combination of the two strategies utilised by Western Osprey are essential due to energy constraints (Kjellen et al*.* 1997; Hake et al. 2001; Kjellen et al*.* 2001; Strandberg & Alerstam 2007).

An important behavioural pattern observed in Western Osprey that facilitates survival is that of fishing site knowledge, whereby adults display high site fidelity to wintering areas utilised, as well as a preference for particular stopover sites during migration (Martell et al*.* 2001; Alerstam et al*.* 2006). Conversely, juveniles are required to search over larger areas for suitable wintering sites and in-turn develop fishing site knowledge. Furthermore, juveniles lack efficiency in foraging techniques used when compared to adults and only have fully developed foraging skills by six months (Prevost 1982). Strandberg & Alerstam (2007) found that juveniles had approximately half the foraging efficiency of adults. In light of these factors, young juveniles often range widely in search of suitable wintering grounds that are not already occupied by adults and hence can be found further afield (Hake et al. 2001; Strandberg & Alerstam 2007).

Migration from their Fennoscandian natal breeding grounds generally commence from early August, whereby birds often migrate through western and central Europe to wintering grounds in tropical western Africa (Kjellen et al*.* 1997; Hake et al. 2001). However, a minority of tracked birds have been noted to occasionally migrate further south, often as far as South Africa (Kjellen et al*.* 1997; Kjellen et al. 2001;

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Hake et al. 2001). On average, females leave the natal breeding grounds one month earlier than males and juveniles (Kjellen et al. 2001). The median respective departure dates for females, males and juveniles was 9 August, 4 September and 24 August (Kjellen et al. 2001). The mean migration journey of birds tracked from Sweden was 6 760 km, whilst one female that migrated through to Mozambique covered more than 10 000 km (Hake et al. 2001). The average time taken by tracked Swedish birds to migrate an average distance of 6 742 km was 45 days, with an associated average migration distance of 174 km/day and an average travelling distance of 257 km/day (Kjellen et al. 2001). The rarity of recovering Fennoscandian-ringed Western Ospreys in southern Africa is displayed in a resultant recovery rate of 0.0002% or 1/5000 birds (Saurola 1994). Furthermore, the recovery rate for South Africa included four recoveries and a resultant recovery rate of 1/6650 birds (Saurola 1994). Conversely, the respective recovery rate for western Africa was 75 times greater than southern Africa, with a resultant recovery rate of 0.015% or 1/65 birds (Osterloff 1977; Stolt et al. 1998).

Colour ring sighting (M64850 + JRW Yellow)

A Fennoscandian-ringed western osprey was sighted at Ingula on 14 November 2015 adjacent to the Braamhoek Dam (Figure 1-2). A colour-numeric ring was sighted on the right tarsus (JRW Yellow) and submitted for validation (metal ring M64850; SAFRING database). Recovery data confirmed that the respective bird was a juvenile male that had been ringed as a hatchling on 8 July 2015 in Kesalahti, Finland. The elapsed time between being ringed as a chick in Finland and recovery as a juvenile in South Africa was 131 days. Furthermore, considering the average fledging and dispersal period for Western Osprey (del Hoyo et al. 1994), as well as the median juvenile departure date recorded by Kjellen et al. (2001), a migration period of 80-90 days was estimated. A minimum straight-line southerly distance of 10 028 km was covered to reach the recovery location. However, if a migration route similar to other tracked Fennoscandian Osprey was followed along the eastern regions of Africa, a migration distance of between 10 700 and 12 000 km could have been covered (Kjellen et al. 1997).

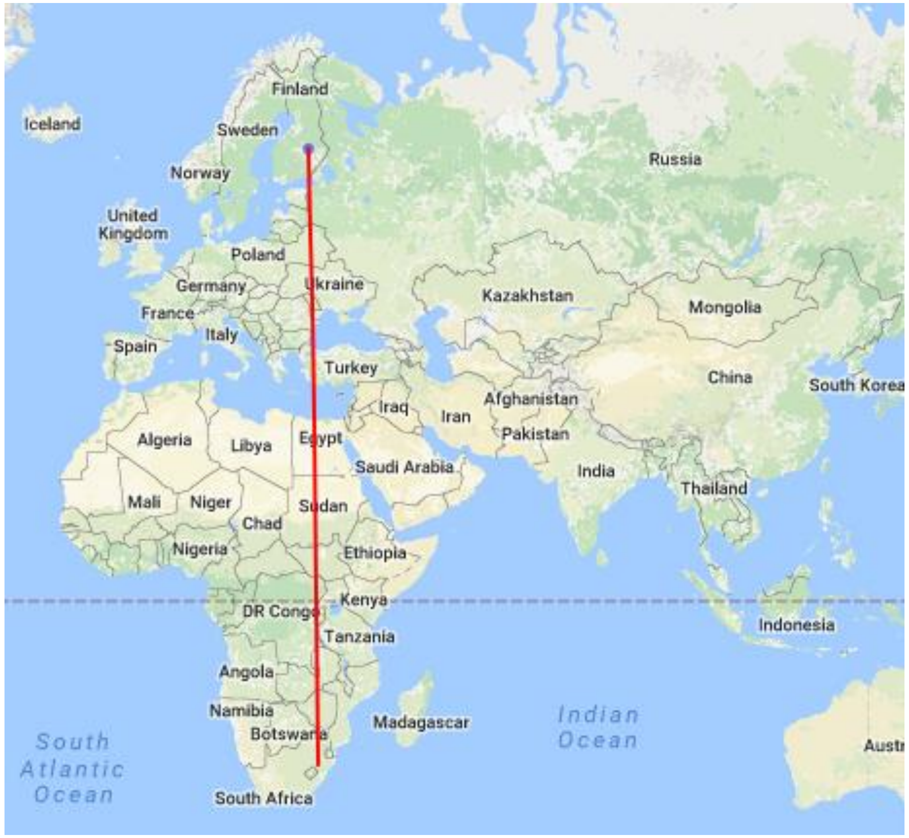

Figure 1: Ringing location in Finland of nestling Osprey (ring M64850) and ring resighting site (south) in South Africa (Note: the line does not indicate the actual migration route, but shows the direct line between ringing and resighting).

Figure 2: A Fennoscandian-ringed juvenile Western Osprey photographed at Braamhoek Dam, Ingula, KwaZulu-Natal, South Africa (Colyn 2015).

The data from this Western Osprey recovery supports the findings that young birds are capable of substantial long distance migrations and that juveniles are more likely to range further afield in search of wintering grounds (Hake et al. 2001; Strandberg and Alerstam 2007). In the absence of fishing site knowledge and associated site fidelity, juveniles are prone to searching for suitable wintering sites over large distances and generally at lower speeds, which often delays arrival wintering times (Kjellen et al. 2001). However, juveniles are not the only age class known to conduct migrations into southern Africa (Kjellen et al. 2001). Six ring recoveries in southern Africa had an equal distribution of both adults (n = 3) and juveniles (n = 3) (Saurola 1994, Oatley et al. 1998).

Conclusion

Long term species-specific ringing projects can contribute tremendous value in expanding our understanding on various aspects of the ecology and status of a given species. Aspects often studied through ringing data include species demography, movement or migration dynamics, population dynamics, breeding biology, species survival estimates and dispersal dynamics (Evans et al. 1999; Harris & Tusker 1999; Spina 1999). Furthermore, trends and changes in species status and associated habitat/ecosystem health (i.e. indicator species) can be assessed with the incorporation of ringing data (Spina 1999). In light of these uses and associated inferences provided, ringing data can directly contribute to the guidance and direction of conservation efforts on a local, national and international scale (Spina 1999).

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See resighting details on SAFRING web:
http://safring.adu.org.za/ring_info_f.php?ring=M64850