

# Clues to the Migratory Routes of the Eastern Flyway of the Western Palearctics – Ringing Recoveries at Eilat, Israel [II – Falconiformes]

By REUVEN YOSEF

Abstract: YOSEF, R. (1998): Clues to the Migratory Routes of the Eastern Flyway of the Western Palearctics – Ringing Recoveries at Eilat, Israel [II – Falconiformes]. *Vogelwarte* 39: 203–208.

Eilat is a well known migratory bottle-neck for raptors and other soaring birds in the Middle East. The paucity of raptors ringed in the Middle East, Africa, and Eurasia stresses the importance of a raptor ringing project that will enhance our understanding of their migrations. A project was conducted in the 1980s and was renewed in spring 1996. Here I report all raptors recovered through the years of ringing conducted at Eilat. A total of 32 birds of 6 species ringed in Eilat were recovered outside Israel, and 4 birds of 2 species were returns. To date, no raptors ringed elsewhere have been controlled at Eilat. The most common species recovered are Steppe Buzzard (*Buteo buteo vulpinus*, 19), and Levant Sparrowhawk (*Accipiter brevipes*, 6). This study demonstrates that raptor ringing recovery data can be effectively used to trace the geographical distributions of the species that migrate through the Eilat region.

Key words: Raptors, ring, recoveries, Eilat, Eurasia, Africa.

Address: International Birdwatching Center, P. O. Box 774, Eilat 88106, Israel.

## 1. Introduction

The importance of Eilat to the migratory bird populations of Eurasia is well known (e.g. SAFRIEL 1968, CHRISTENSEN et al. 1981, YOM-TOV 1988, IZHAKI & MEITAV 1997a, b, in press). It is an especially important bottle-neck for raptors and other soaring birds (SHIRIHAI 1987, 1988, SHIRIHAI & CHRISTIE 1992, SHIRIHAI & YEKUTIEL 1991, YOSEF 1995, 1997). FRUMKIN et al. (1995) estimated that 3 million raptors from Europe and Asia migrate through the Middle East annually.

The Eilat/Aqaba route, located at the hub of the only land bridge between Eurasia and Africa, is used in autumn by a large proportion of the Steppe Eagles (*Aquila nipalensis*) of the world (for counts see SHIRIHAI & CHRISTIE 1992, LESHEM & YOM-TOV 1996) and north to their breeding grounds in spring by over 30 different raptor species (SHIRIHAI 1987, 1988, SHIRIHAI & CHRISTIE 1992, SHIRIHAI & YEKUTIEL 1991, YOSEF 1995, 1997). In spring, the Red Sea and the Gulf of Aqaba/Eilat act as a long deflection barrier forcing northbound raptors to concentrate at Eilat (GRIEVE 1996). Also, Eilat is situated at the northern edge of almost 2000 km of continuous desert regions of the Sahara and Sinai deserts. Hence many birds land here to rest after crossing the deserts (YOM-TOV 1988).

As far as we are aware there are no migratory raptor ringing stations in the Old World. Trans-Saharan raptors ringed at Eilat in previous years have supplied insight into their migratory biology and destinations (e.g. CLARK et al. 1986, GORNEY & YOM-TOV 1994). The paucity of raptors ringed in the Middle East, Africa, and Eurasia stresses the importance of a raptor ringing project that will enhance our understanding of their migrations (CLARK 1995). A project was conducted between 1984 to 1988 in Eilat by the Society for Protection of Nature in Israel (SPNI) and was partially supported by the International Birdwatching Center in Eilat (IBCE; CLARK et al. 1986). IBCE has renewed the project since spring 1996 with the aim of collecting data on individual migrants, to perfect capture techniques, and to encourage researchers from neighbouring countries to participate in our program. Here we report all raptors recovered through the years of ringing conducted at Eilat.

## 2. Methods

I collated all data relating to the raptor ringing program in Eilat. In addition, many raptors were caught accidentally in the mist nets and were ringed at the Passerine ringing station (cf. YOSEF 1997, in press) during the

years that the raptor ringing program was not operational. This included all previous records of recoveries reported but not recorded at the IBCE or Israeli Bird Ringing Center (IBRC) offices. IBCE data were checked against lists supplied by the IBRC (Y. LANGER, pers. comm.) to clarify misprinted or misplaced data. Birds recaptured after their initial ringing were described as RETURN if recaptured in a subsequent season, and RECOVERY as one caught or found dead away from Eilat. Data are presented as means  $\pm$  SD unless otherwise specified.

### 3. Results and Discussion

A total of 32 birds of 6 species ringed in Eilat were recovered outside Israel, and 4 birds of 2 species were returns. To date, no raptors ringed elsewhere have been controlled at Eilat. The most common species recovered are Steppe Buzzards (*Buteo buteo vulpinus*, 19), and Levant Sparrowhawk (*Accipiter brevipes*, 6).

To date, 1829 **Steppe Buzzards** have been ringed at Eilat, and 19 (1.0%) recovered in Northern and Central Europe, and Central Asia in the north, to Namibia and South Africa in the south (Fig. 1). The birds had travelled an average of  $3600 \pm 2019$  km (range 480–7150) from where they were ringed. The maximum time between ringing and recovery was 12 years and 2 months. This

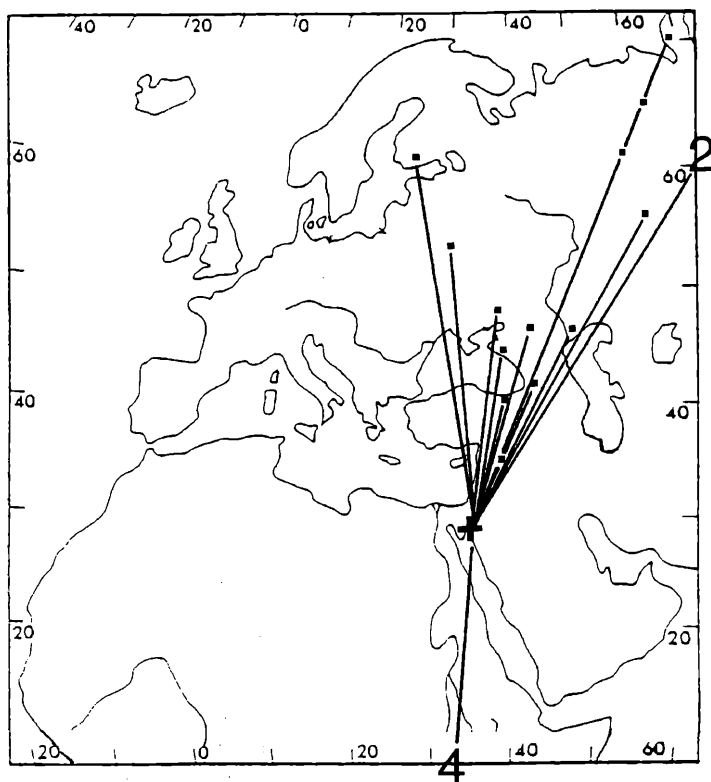


Figure 1: Steppe Buzzards (*Buteo buteo vulpinus*) ringed at Eilat and recovered in Central and Eastern Europe, and central Asia. Of the four individuals recovered in Africa, three were in South Africa and one in Namibia.

Abb. 1: Wiederfunde in Eilat beringter Falkenbussade (*Buteo buteo vulpinus*) aus Mittel- und Osteuropa und aus Zentral-Asien. Von den 4 Afrika-Wiederfunden stammen 3 aus Südafrika und 1 aus Namibia.

data concurs with SHIRIHAI (1996) who stated that most of the population that migrates through the Middle East is from the far north and eastern Europe and from Siberia and central Asia. However, our recoveries show that buzzards winter as far south as South Africa and not as mentioned by SHIRIHAI (1996) who considered their wintering grounds to be in East Africa. Our data concur with MOREAU (1972) who reported that Finnish rings were recovered in Swaziland and Zimbabwe, and that *B. b. vulpinus* is mostly found in South Africa. In addition, the „return“ of two buzzards in subsequent seasons illustrates that individuals (and probably populations?) migrate along the same routes on their annual migrations.

Of 764 Levant **Sparrowhawk** ringed at Eilat, six (0.8%) were recovered to the north of Israel (Fig. 2). One was from Syria and I assume was on migration to the breeding grounds. Others were recovered at what are presumed to be the species breeding distribution in Romania, Ukraine, and Russia (DEL HOYO et al. 1994, SHIRIHAI 1996). The birds had travelled an average of  $1610 \pm 525$  km (range 600–2000). The maximum time between ringing and recovery was 2 years and 10 months. Although our data confirm their breeding grounds, the lack of any recoveries in the south still keeps us in the dark as to their wintering grounds in Africa. We hope that the intensive trapping of this species at Eilat in the springs of 1996 and 1997 will soon result in more recoveries.

Of 94 **Black Kites** (*Milvus migrans*) ringed in Eilat, only two (2.1%) have been recovered in Western Russia (Fig. 3), both within two years of ringing. The birds had travelled 1659 and 2250 km respectively.

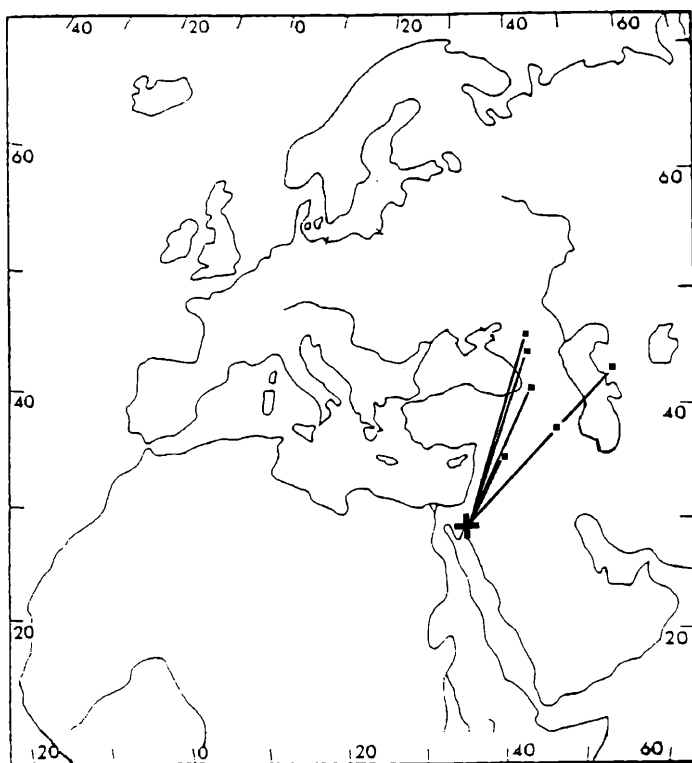


Figure 2: Levant Sparrowhawks (*Accipiter brevipes*) ringed at Eilat and recovered in Eastern Europe and Asia.

Abb. 2: Wiederfunde in Eilat beringter Kurzfangsperber (*Accipiter brevipes*) aus Osteuropa und Asien.

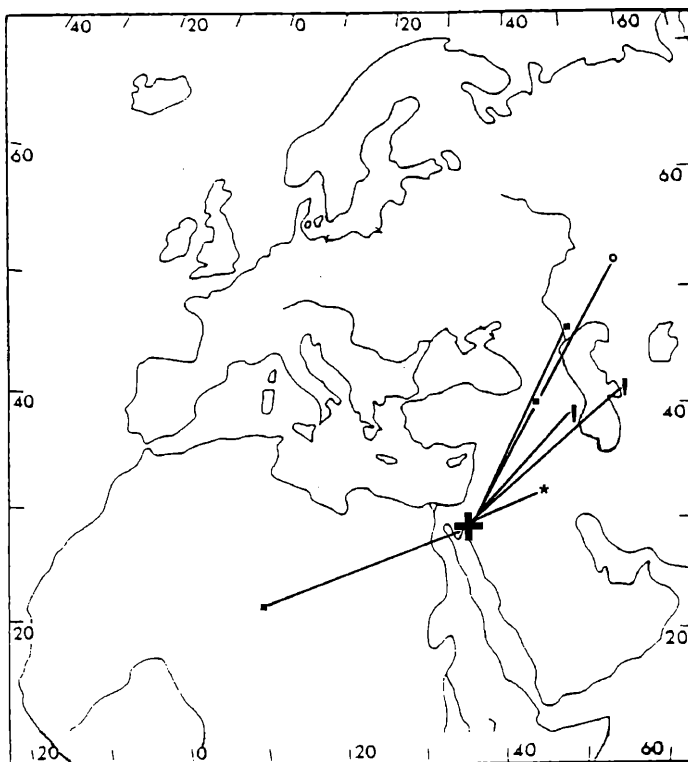


Figure 3: Marsh Harriers (*Circus aeruginosus*, filled blocks), and Pallid Harrier (*Circus macrourus*, asterisk), Black Kites (*Milvus migrans*, filled wedges), and Booted Eagle (*Hieraaetus pennatus*, open circle) ringed at Eilat and recovered in EurAsia. One Marsh Harrier was recovered in Africa at Lake Chad.

Abb. 3: Wiederfunde in Eilat beringter Rohrweihen (*Circus aeruginosus*, schwarze Quadrate), einer Steppeweihe (*Circus macrourus*, Stern), von Schwarzmilanen (*Milvus migrans*, schwarze Keile) und eines Zwergadlers (*Hieraaetus pennatus*, offener Kreis) aus Eurasien. Eine Rohrweihe wurde in Afrika am Chad-See wiedergefunden.

One hundred and forty **Marsh Harriers** (*Circus aeruginosus*) have been ringed at Eilat of which three (2.1%) were recovered. Two were recovered in Russia and Belyorussia, to the north of Israel, and one to the south in Chad (Fig. 3). The latter was recovered after 4 years and 2 days. The birds had travelled an average of  $2680 \pm 583$  km suggesting a migration of over 5000 km for the species between their breeding grounds in eastern Europe and western Asia and their wintering grounds in Africa.

One **Pallid Harrier** (*Circus macrourus*) of only 19 ringed at Eilat was recovered at the Jordan-Iraq border 5 years and 6 months after it was ringed.

Only one **Booted Eagle** (*Hieraaetus pennatus*) of the 59 ringed has been recovered in central Russia after 3 years and 5 months.

None of the 319 **Kestrels** (*Falco tinnunculus*) ringed at Eilat were recovered, however, three returned in subsequent years to Eilat on migration. Two birds returned 52 weeks since their ringing. An adult female was recaptured seven years after it was ringed.

#### 4. Concluding Remarks

The returns of the Buzzards and Kestrels, and the recovery of Levant Sparrowhawk and Pallid Harrier in the region suggests that many of the raptors are route-faithful in their migrations. This has not been previously validated through ringing of raptors and is important for future conservation considerations in the region.

A comparison of the ring recoveries of raptors versus other bird species (YOSEF 1997) shows that the raptors, except for one buzzard in Finland, were recovered mostly in regions immediately to the north of Israel. One buzzard was recovered to the east of Moscow, Russia, suggesting that birds from central Asia also migrate through the region (Fig. 1). This is in contrast to the recoveries and controls of White Stork (*Ciconia ciconia*) and Chiffchaff (*Phylloscopus collybita*) which were from central Europe, and Lesser Whitethroat (*Sylvia curruca*) from central and western Europe (YOSEF 1997).

This study has shown that, like other avian species, raptor ringing recovery data can be effectively used to trace the geographical distributions of the species that migrate through the Eilat region. In addition to ringing, in recent years satellite-telemetry has advanced considerably and has contributed immensely to the knowledge (e.g. MEYBURG et al. 1995). However, the drawback is that the technique (transponders and satellite time) is expensive and only small sample sizes are used to represent populations with large geographic distributions. Also, this results in small data sets of parameters evaluated when raptors are captured, evaluated, ringed and released (e.g. biometrics, endoparasites). In addition, technical failures are known to occur reducing tracking time or data at critical times of the life cycle. Hence, at present, in order for us to understand large scale movements and distributions, ringing is still a technique that can supply reliable, longterm data. However, the lack of raptor ringing stations in Europe and Asia is underlined by the fact that most of the above recoveries are reported by hunters or from other non-natural deaths. This may also bias the data because most of the raptor recoveries to date are from areas around and to the east of the Black and Caspian Seas. Although this also suggests the migration routes and the breeding areas of the raptors that migrate through the Eilat region, this stresses the importance of developing the concept of raptor trapping and ringing programmes on a wider scale in the Old World. To date, the project in Eilat is the only existing raptor-focused ringing programme and we hope to have interested personnel from Europe and the Middle East work with us to develop the concept on continental scales.

#### 5. Zusammenfassung

Eilat ist ein bekannter Zug-Engpaß für im Nahen Osten ziehende Greifvögel und andere Segelflieger. Ein in den 1980er Jahren in Eilat durchgeführtes Beringungsprojekt wurde im Frühjahr 1996 wieder aufgegriffen. In dieser Arbeit sind alle Greifvogelwiederfunde von in Eilat beringten Vögeln berücksichtigt. Insgesamt 32 Vögel von 6 Arten wurden von außerhalb Israels zurückgemeldet, und 4 Vögel von 2 Arten ließen sich in einer späteren Saison in Eilat als Rückkehrer nachweisen. Kontrollen außerhalb beringter Greifvögel gelangen in Eilat bislang nicht. Die meisten Wiederfunde gibt es vom Falkenbussard (*Buteo buteo vulpinus*, 19) und vom Kurzfangsperber (*Accipiter brevipes*, 6). Die vorliegende Untersuchung zeigt, daß sich durch Rückmeldungen der geographische Einzugsbereich der bei Eilat durchziehenden Greifvögel gut erfassen läßt.

#### 6. Literature

Christensen, S., O. Lou, M. Muller & H. Wohlmuth (1981): The spring migration of raptors in southern Israel and Sinai. Sandgrouse 3: 1–42. \* Clark, W. S., K. Duffy, E. Gorney, M. McGrady & C. Schultz (1986): Raptor ringing at Eilat, Israel. Sandgrouse 7: 21–28. \* del Hoyo, J., A. Elliott & J. Sargatal (eds., 1994): Handbook of the birds of the world. Vol. 2. New World Vultures to Guineafowl. Lynx Edicions, Barcelona. \* Frumkin, R., B. Pinshow & S. Kleinhaus (1995): A review of bird migration over Israel. J. Ornithol. 136: 127–147. \* Gorney, E., & Y. Yom-Tov (1994): Fat, hydration condition, and moult of Steppe Buzzards, *Buteo buteo vulpinus*, on spring migration. Ibis 136: 185–192. \* Izhaki, I., & A. Maitav (1997a):

Blackcaps *Sylvia atricapilla* stopping over at the desert edge: inter- and intrasexual differences in spring and autumn migration. Ibis 140: in press. \* Izhaki, I., & A. Maitav (1997b): Blackcaps *Sylvia atricapilla* stopping over at the desert edge: physiological state and flight-range estimates. Ibis 140: in press. \* Leshem, Y., & Y. Yom-Tov (1996): The magnitude and timing of migration by soaring raptors, pelicans and storks over Israel. Ibis 138: 188-203. \* Meyburg, B.-U., W. Scheller & C. Meyburg (1995): Migration and wintering of the Lesser Spotted Eagle *Aquila pomarina*: a study by means of satellite telemetry. J. Ornithol. 136: 401-422. \* Moreau, R. E. (1972): The Palearctic-African bird migration systems. Academic Press, London. \* Safriel, U. (1968): Migration in Eilat, Israel. Ibis 110: 283-320. \* Shirihi, H. (1987): Eilat – an intercontinental highway for migrating raptors. International Birding Center, Eilat, Israel. \* Idem (1988): Raptor migration at Eilat in Spring 1987. Torgos 13: 47-53. \* Idem (1996): The Birds of Israel. Academic Press, London. \* Shirihi, H., & D. A. Christie (1992): Raptor migrations at Eilat. Br. Birds 85: 141-186. \* Shirihi, H., & D. Yekutieli (1991): Raptor migration at Eilat – spring 1988. In Raptors in Israel: passage and wintering populations (D. Yekutieli, ed.), International Birdwatching Center, Eilat. \* Yom-Tov, Y. (1988) Bird migration in Israel In The Zoogeography of Israel (Y. Yom-Tov & E. Tchernov, eds.). Dr. W. Junk Publ., Dordrecht, The Netherlands. \* Yosef, R. (1995): Spring 1994 raptor migration at Eilat, Israel. J. Raptor Res 29: 127-134. \* Idem (1997): Clues to the Migratory Routes of the Eastern Flyway of the Western Palearctics – Ringing Recoveries at Eilat, Israel [I – Ciconiiformes, Charadriiformes, Coraciiformes, and Passeriformes.]. Vogelwarte 39: 131-140.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Vogelwarte - Zeitschrift für Vogelkunde](#)

Jahr/Year: 1997/98

Band/Volume: [39\\_1998](#)

Autor(en)/Author(s): Yosef Reuven

Artikel/Article: [Clues to the Migratory Routes of the Eastern Fly way of the Western Palearctics - Ringing Recoveries at Eilat, Israel \[II - Falconiformes\] 203-208](#)