



## Tracking the Intercontinental Migrations of Small Falcons

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The Eurasian Hobby (*Falco subbuteo*) and the Amur Falcon (*Falco amurensis*) are small slim raptors and complete long-distance, trans-equatorial migrants. The Eurasian Hobby breeds across Europe and Asia. European birds apparently winter in central and southern Africa. Very little is known about Hobby migration. Only a small number of birds are observed at the well-known bottlenecks such as Gibraltar. A total of 5,720 Hobbies have been ringed in 10 European countries from 1909-1998 of which 203 (3.5%) were subsequently recovered. We know only of two ring recoveries from Africa south of the Sahara.

A prototype of the smallest satellite transmitter produced so far weighing just 5g (1.9% of the bird's body mass) was fitted for the first time to a raptor, an adult female Hobby on 8 August 2008 in Germany near Berlin and has successfully recorded two autumn and spring migrations, respectively. We could not detect any effect of the transmitter on the Hobbies' behaviour. This smallest and lightest satellite transmitter delivered astoundingly high numbers of good Argos Doppler fixes. The complete dataset comprised slightly over 2,000 positions, of which 49% were high-quality locations (class 1-3). There were less fixes in Europe (65 on average per month) than in Africa (80 per month), the lowest number being recorded in the Mediterranean region, which is explained by interference in this area. The percentage of high quality fixes in Europe (22%) was lower than in Africa. Signal transmission lasted for 21 ½ months.

The route fidelity was low in the first Hobby, but high with respect to the wintering area. All migration routes of this bird were to the west of the shortest and most direct line between breeding site and wintering area (see Fig. 1). The distance migrated from the breeding site, not including regional movement in Angola, to the southernmost point in Zimbabwe was 10,065 km in the first recorded migration. The highest flight speeds during migration were recorded in spring 2010 in Mali and Morocco with 1,243 km covered in two days (a daily average of 621 km). During migration from Morocco to the South of France (1,032 km in two days) the falcon also migrated at night when a fix was made over the Mediterranean in the vicinity of Gibraltar. Daily flight distances recorded were up to 481 km on individual migration days. Migration across the Sahara took some 4 to 4½ days on each occasion. During both wintering periods the falcon spent the majority of its time in the Angolan Miombo woodlands. In its wintering area the small falcon showed an eagerness for travel. In the wintering period from 16 October 2008 to 7 April 2009, the bird covered a total distance of at least 9,025 km between identified night roosts. In 2009 the bird spent half of the year in the wintering area, a third at the breeding site and the remaining 18% of the time on migration, some 65% in Africa and 35% in Europe.

Twelve more Hobbies were fitted with these tiny 5g PTTs, eight in 2009 and four in 2010. Thus we were able to track the spring migration of several falcons in 2010 (see Fig. 1). Almost no similar records are available from any other small falcon species.

If one species can claim the title for undertaking the most arduous of all raptor migrations, it is the Amur Falcon. The principal breeding and wintering ranges in northeastern Asia and southern Africa are separated by both 70° of latitude and longitude. This species is believed to undertake the longest regular overwater passage of any raptor as it crosses the Indian Ocean between India and tropical East Africa in autumn. According to the literature this species is an "elliptical migrant", and its return route back to its breeding area is largely over land and to the north and west of its southbound route.

In a joint effort the World Working Group on Birds of Prey (WWGBP), Microwave Telemetry, Inc., BirdLife Northern Natal and the Migrating Kestrel Group of the Endangered Wildlife Trust in South Africa started a satellite tracking program to study the almost unknown migration routes and other aspects of the biology of this little known raptor species. Ten adult birds were fitted with 5g PTTs in Natal, South Africa. Five falcons were tracked up to their breeding grounds in north-eastern China on their 14,500 km trip. In one case, almost 6,000 km were covered non-stop in five days, indeed an extreme endurance migration.



Adult female Amur Falcon, January 2010.

Photo by Bernd Meyburg



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An adult female Eurasian Hobby, the first raptor ever fitted with a 5g PTT, on 8 August 2008.

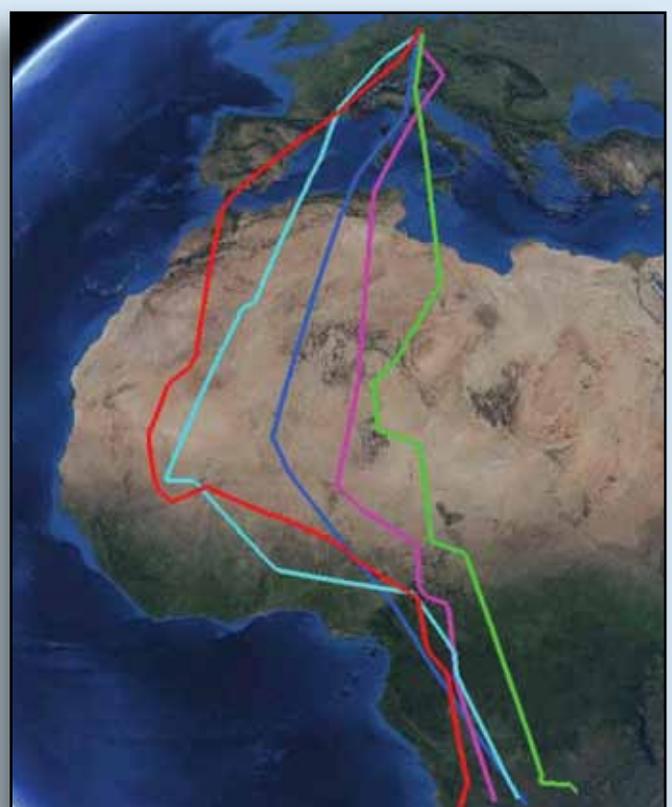


Fig. 1: The 2010 spring migration routes of five Eurasian Hobbies from their wintering grounds to their breeding area in Germany. The red line shows the track of the first bird marked in 2008.