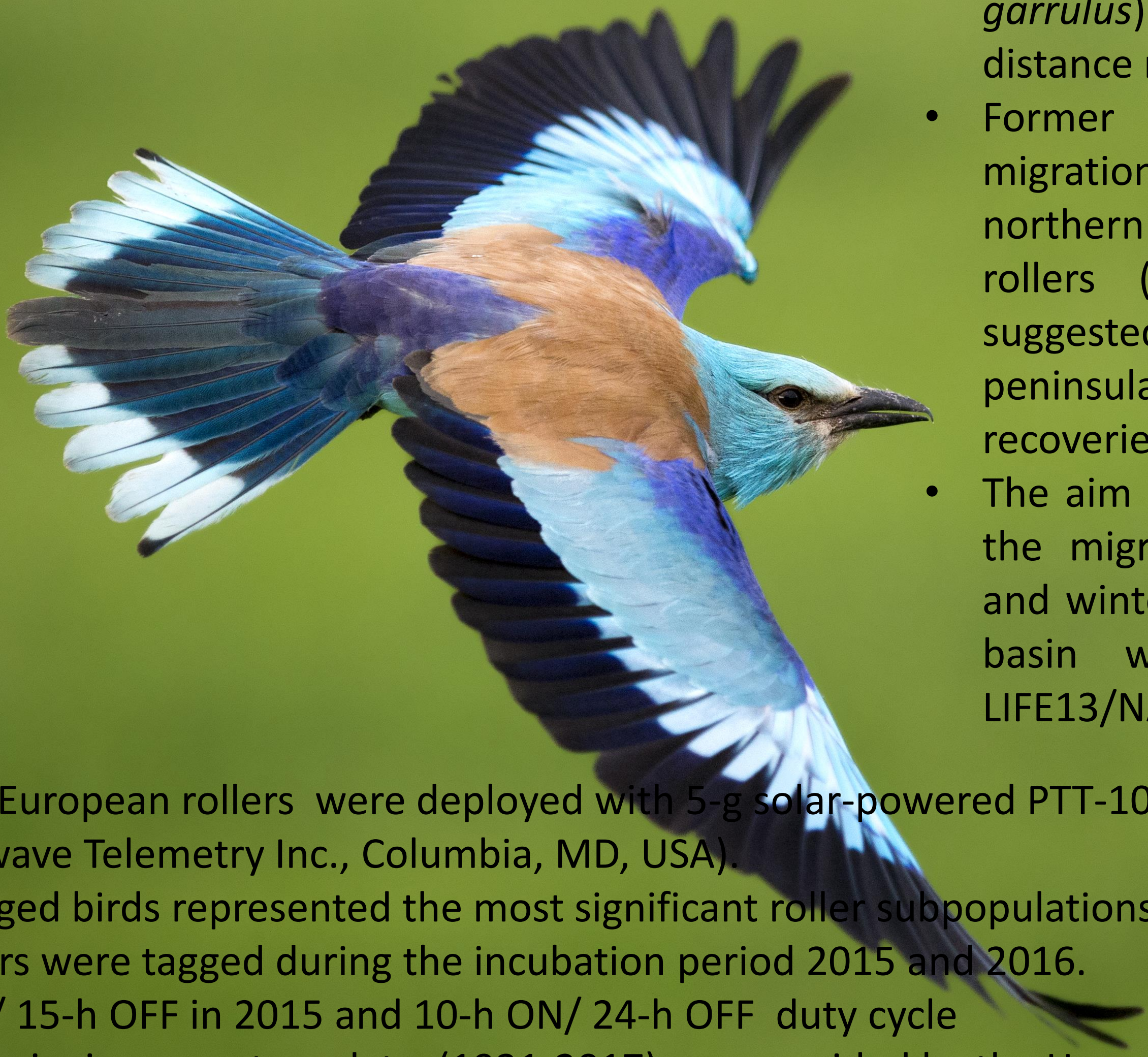




# Loop migration in adult European rollers (*Coracias garrulus*) through the Middle East

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## Introduction

- The European roller (*Coracias garrulus*) is a medium size, long-distance migrant bird species.
- Former studies found different migration pathways for central and northern population of European rollers (Finch *et al.* 2015) and suggested the use of Arabian-peninsula in spring based on ring recoveries (Finch et al. 2016).
- The aim of this study was to identify the migration route, stopover sites and wintering area of the Carpathian basin within the framework of LIFE13/NAT/HU/000081 LIFE+ project

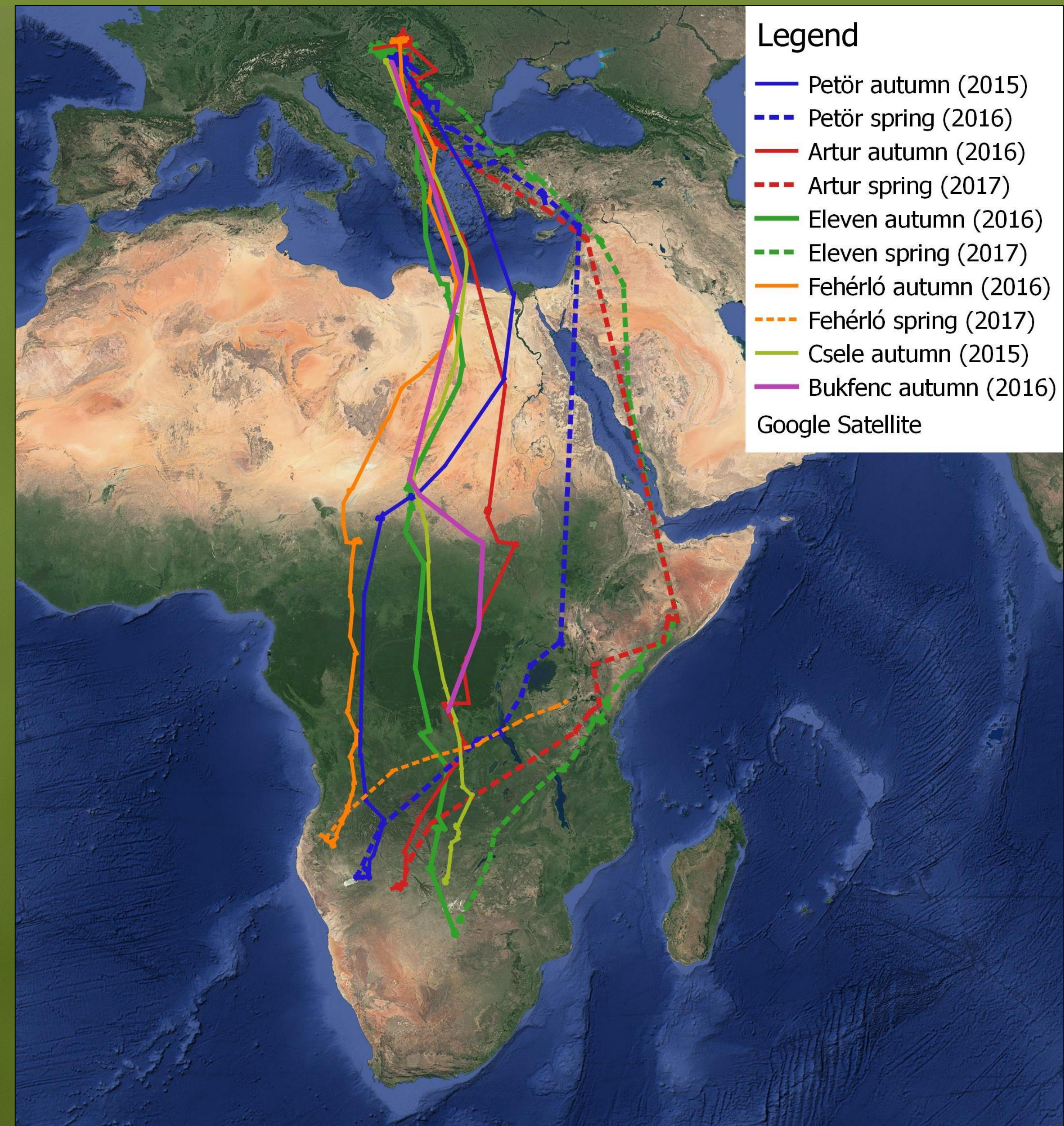


Fig. 1. Overview map of the migration of six European rollers from the Carpathian basin

## Methods

- 6 adult European rollers were deployed with 5-g solar-powered PTT-100 satellite transmitters (Microwave Telemetry Inc., Columbia, MD, USA).
- The tagged birds represented the most significant roller subpopulations in Hungary.
- All rollers were tagged during the incubation period 2015 and 2016.
- 8-h ON/ 15-h OFF in 2015 and 10-h ON/ 24-h OFF duty cycle
- 7 spring ringing recapture data (1931-2017) was provided by the Hungarian Bird Ringing Centre

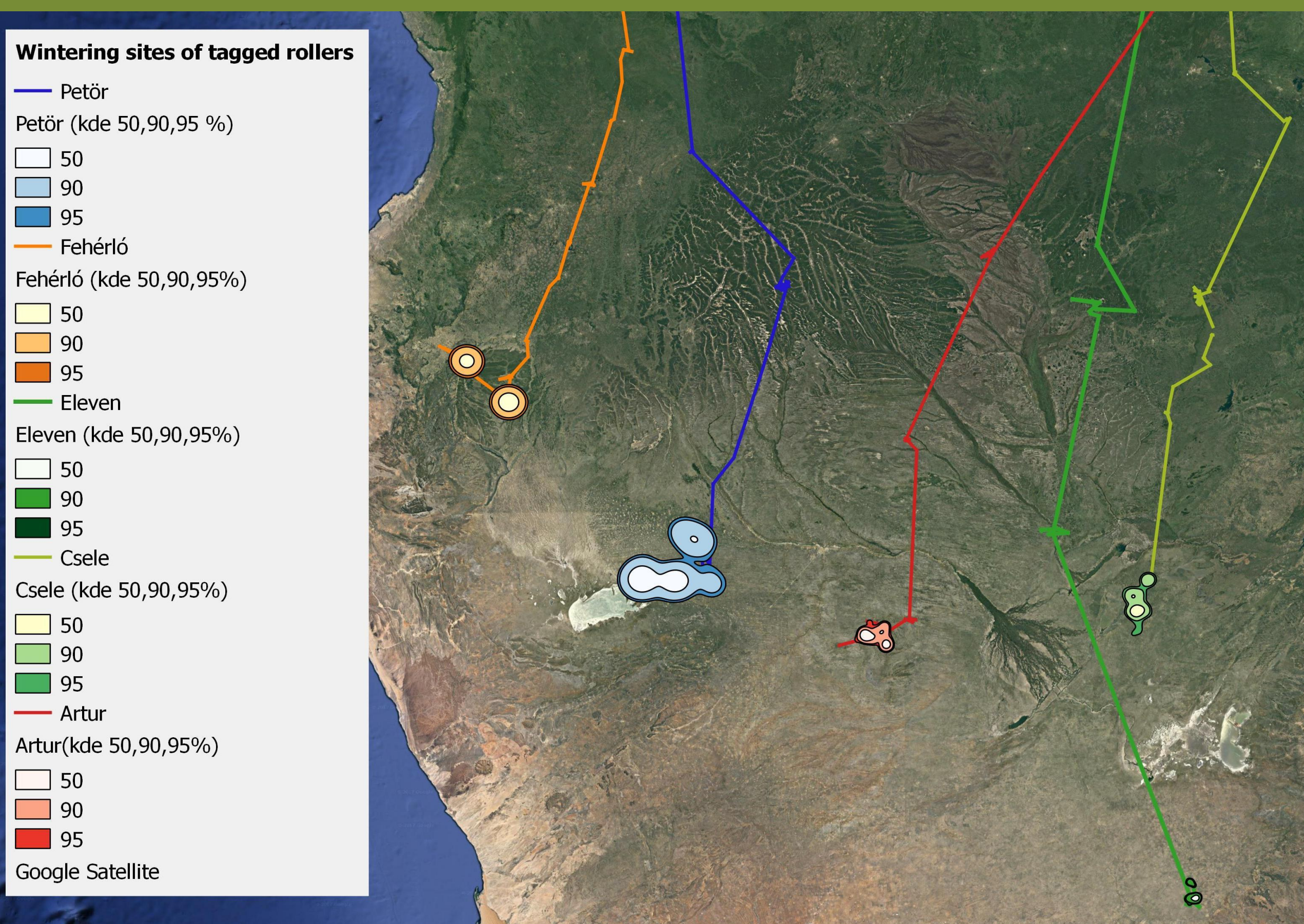


Fig. 2. Wintering sites of the tagged European rollers

## Results

- 2 rollers died during the migration (after the rainforest zone and in Tanzania) and one during the wintering period.
- The spring migration pathway was longer in each bird then the autumn (9616±912 km vs 8341±765 km) and the duration was 18±6,5 days shorter .
- Wadi Fara region is Chad was used by 4 bird as a stopover sites for 8-27 days (Fig 3.)
- All of the tagged birds spent the winter in different countries (Angola, Namibia, Botswana) (Fig 1-2.)
- All of the rollers which has started the spring migration used the counter-clockwise loop pathway trough the Arabian peninsula (Fig.4.)

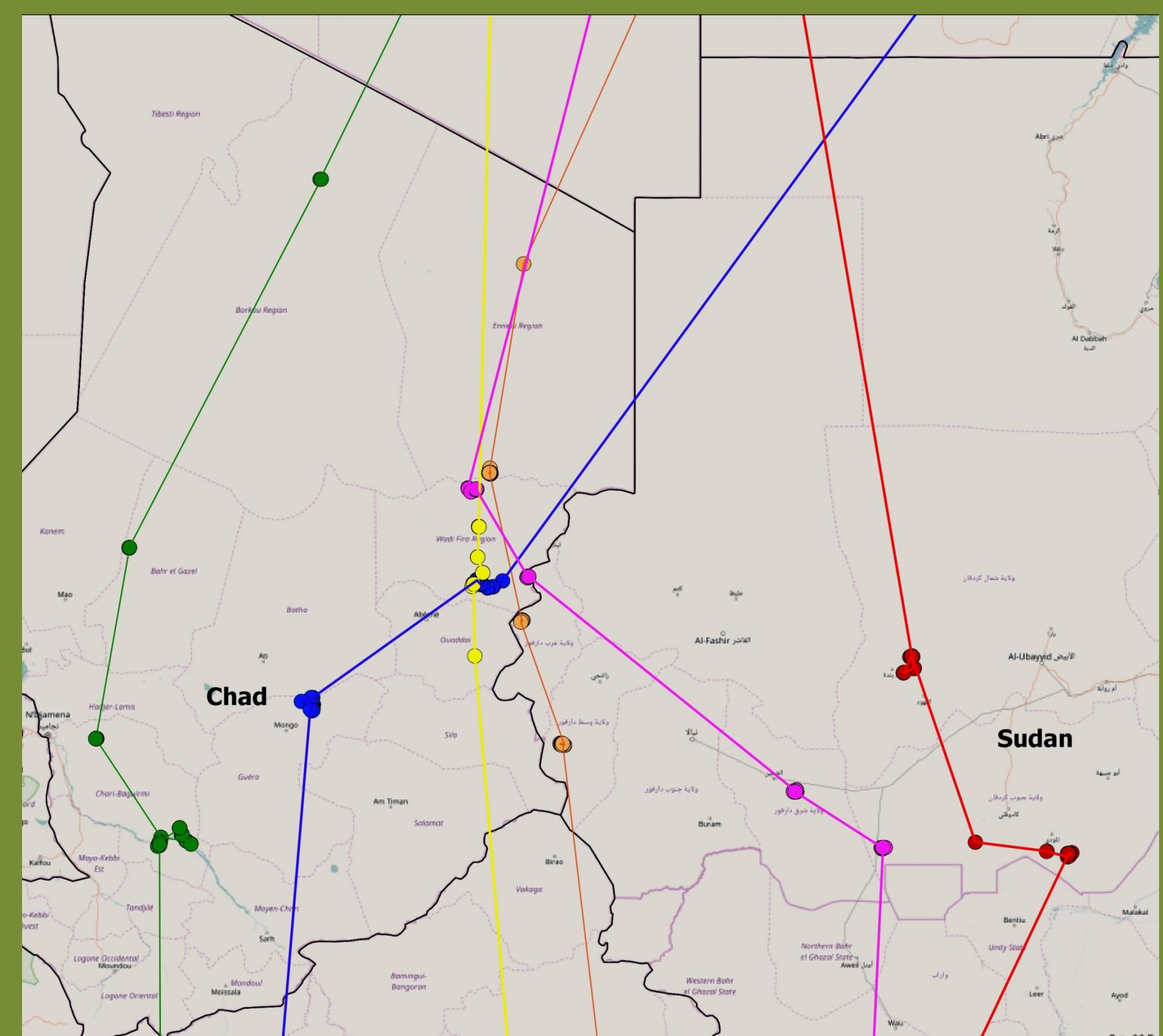


Fig. 3. Crossover-sites in Sahel region

## Discussion

- However, Finch *et al.* (2015) found slightly clockwise migration in Austrian population, all of our tagged rollers follow counter-clockwise loop during spring migration
- This migration pattern was also found in the Latvian population, as well.
- We found weak migratory connectivity and rollers from the Carpathian basin most probably share wintering areas with the south-western roller populations (Finch *et al.*, 2015)
- Ring recoveries suggest the existence of an other migration pathway for the Hungarian roller population, but the counter-clockwise loop seems to be the most common migration route which occurs in any subpopulation in Hungary.
- The migration route was shorter but lasted longer in autumn than in spring.

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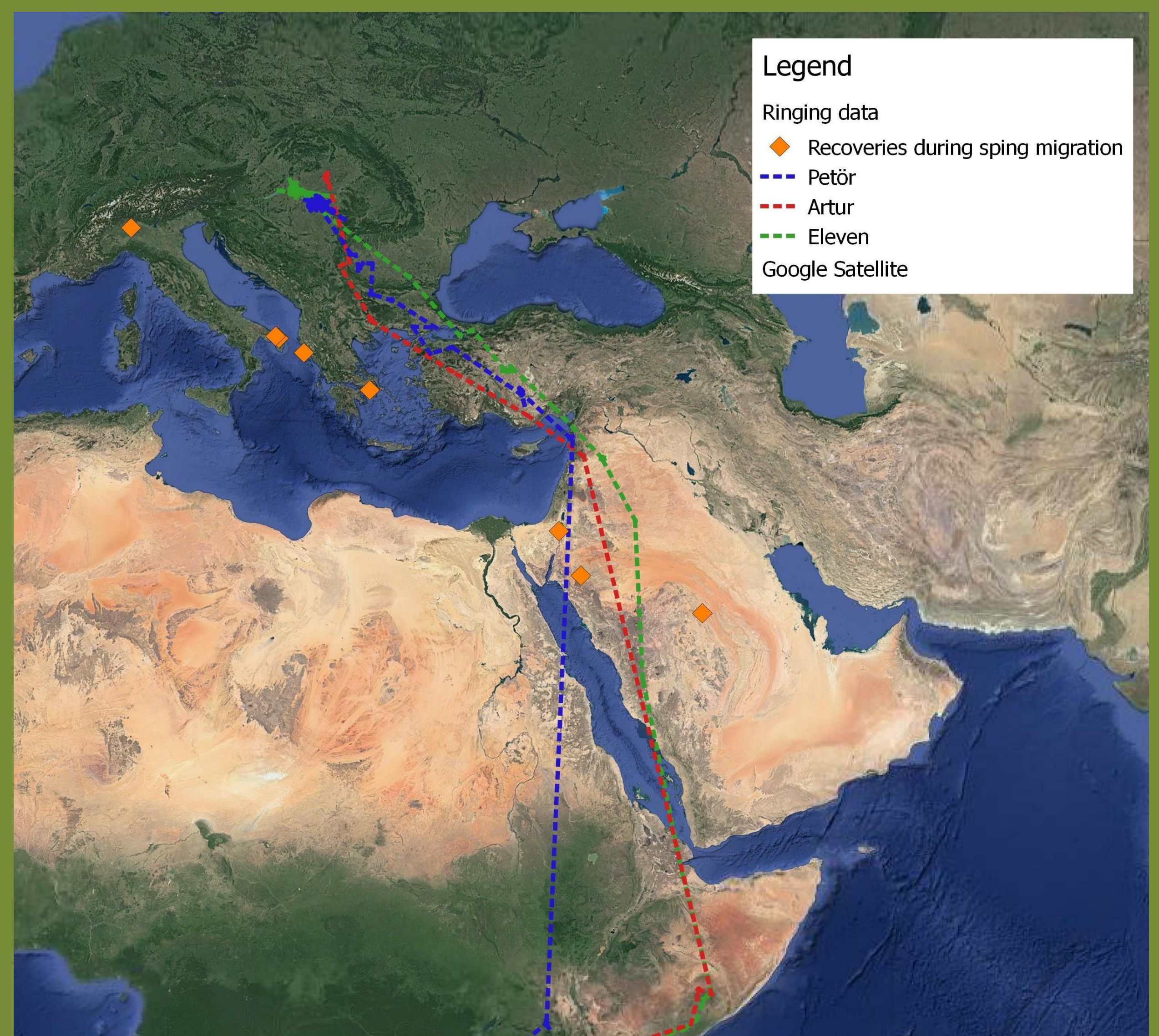


Fig. 4. Spring migration of rollers through the Arabian-peninsula