Animal Flight Group

אוניברסיטת חיפה
University of Haifa
جامعة حيفا

Minerva Center for
MOVEMENT ECOLOGY

Using an advanced tracking system to understand the movement and breeding ecology of the Little Swift (*Apus affinis*)

Itai Bloch & Nir Sapir

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- **Introduction**
- Research hypothesis
- Methods and materials
- Results

Introduction - study species: Little swift

Little swift - *Apus affinis*

- *Apus affinis galilejensis*
- Colonies of dozens to hundreds of couples
- Part of the flock sleeps in the colony
- Aerial Insectivores

Introduction - study species: Distribution

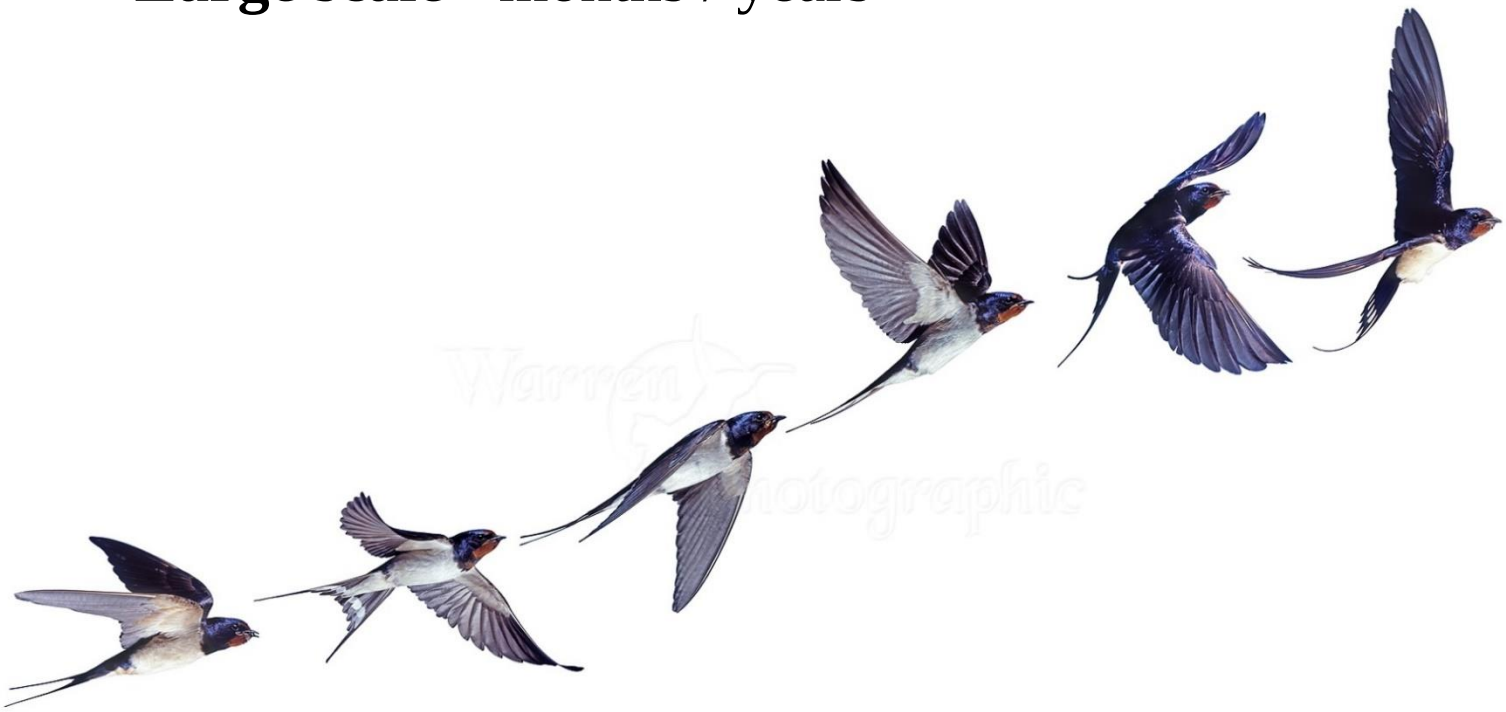
BirdLife International (2004). Detailed species account from Birds in Europe: population estimates, trends and conservation status.

Introduction - Animal movement: Scale

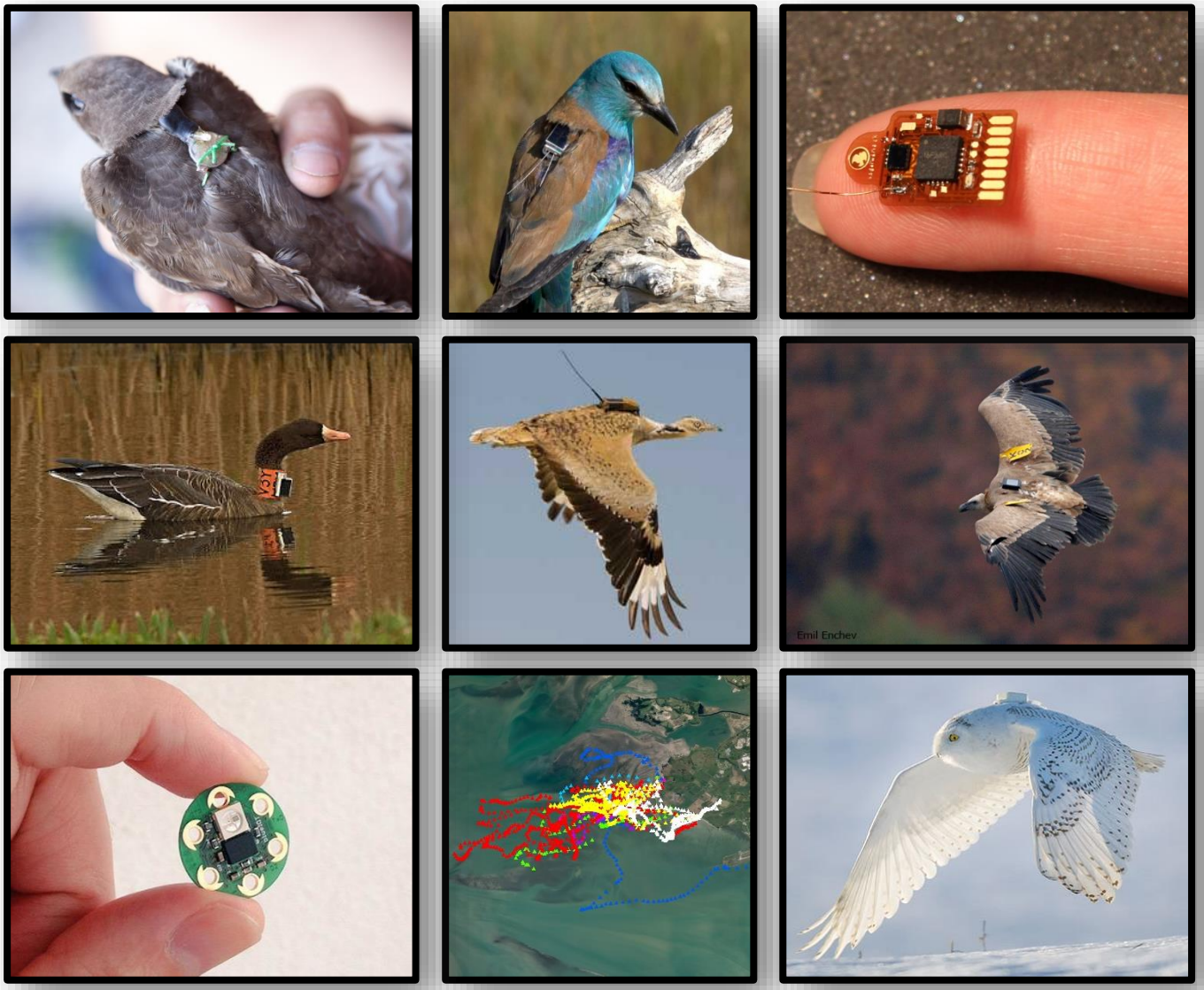
Small scale - minutes / hours

Medium Scale - days / weeks

Large scale - months / years

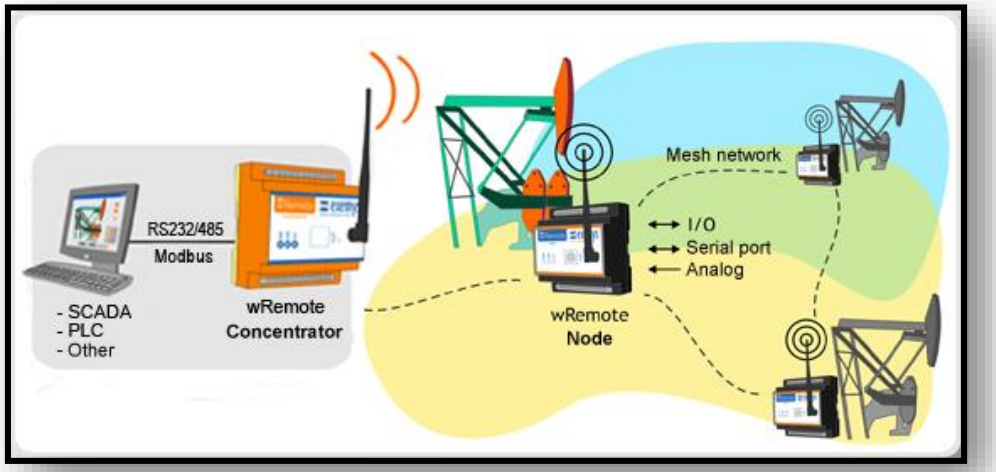


Introduction - Animal movement: Measurement



Introduction – The ATLAS system

- ATLAS **A**dvanced **T**racking and **L**ocalization of **A**nimals in real-life **S**ystems
- Reverse GPS – 1 g tags
- Real-time / retrospective viewing



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Hypothesis

The movement of Little Swifts and their nest visits will vary during the breeding season.

These changes will be reflected in:

- Frequency of nest visits
- Duration of stay in the nest during the night
- Foraging range

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1. Location transmitters (ATLAS tags)
2. Comparing the number of visits during the breeding season

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2. Location at night during the breeding season

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1. Location transmitters (ATLAS tags)
2. Foraging range during the breeding season

Hypothesis - Predictions

The movement of Little Swifts and their nests visits will vary during the breeding season.

These changes will be reflected in:

- Frequency of nest visits –
- Duration of stay in the nest during the night –
- Foraging range -

Hypothesis - Predictions

The movement of Little Swifts and their nests visits will vary during the breeding season.

These changes will be reflected in:

- Frequency of nest visits - will increase
- Duration of stay in the nest during the night –
- Foraging range -

Hypothesis - Predictions

The movement of Little Swifts and their nests visits will vary during the breeding season.

These changes will be reflected in:

- Frequency of nest visits - will increase
- Duration of stay in the nest during the night - will decrease
- Foraging range -

Hypothesis - Predictions

The movement of Little Swifts and their nests visits will vary during the breeding season.

These changes will be reflected in:

- Frequency of nest visits - will increase
- Duration of stay in the nest during the night - will decrease
- Foraging range - will remain unchanged

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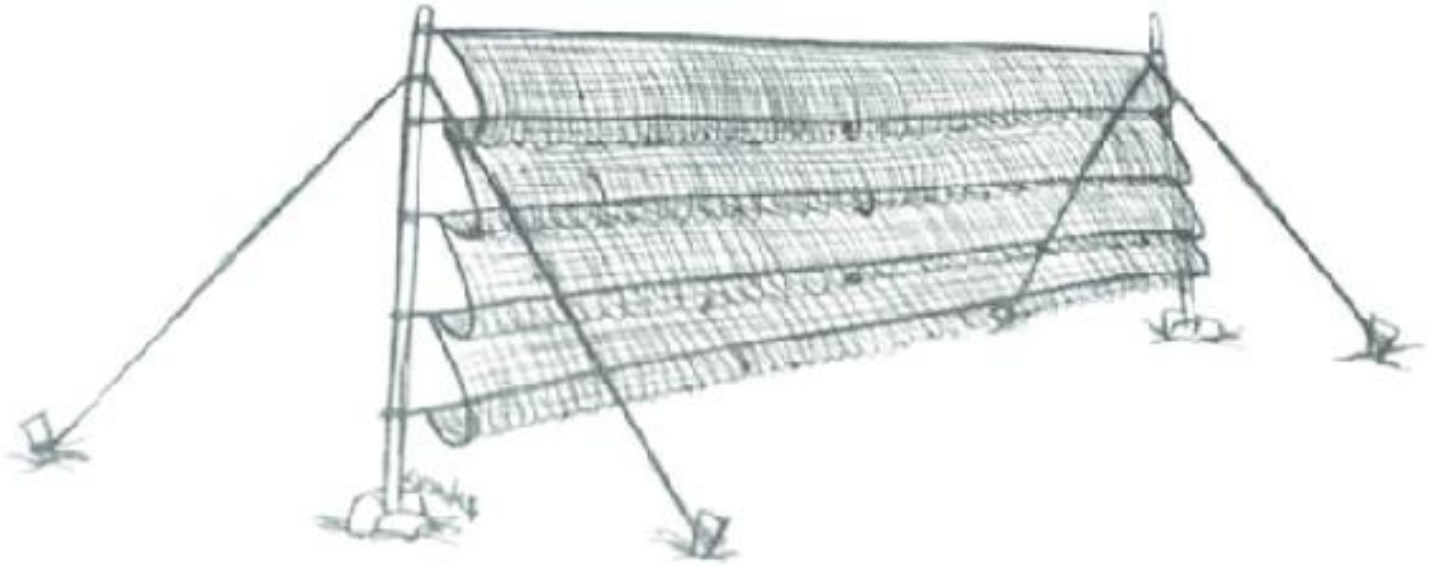
Methods - Swift capture

- Mist nets
- Net location
- Capture time

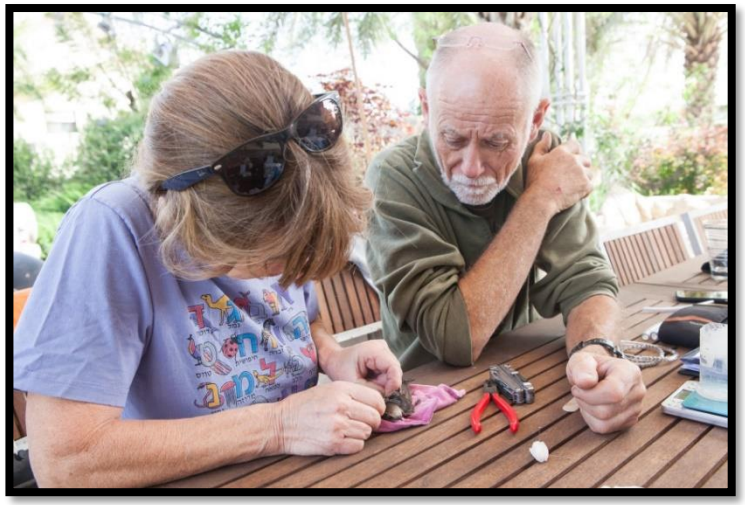


Methods - Swift capture

Methods – Tags & data collection

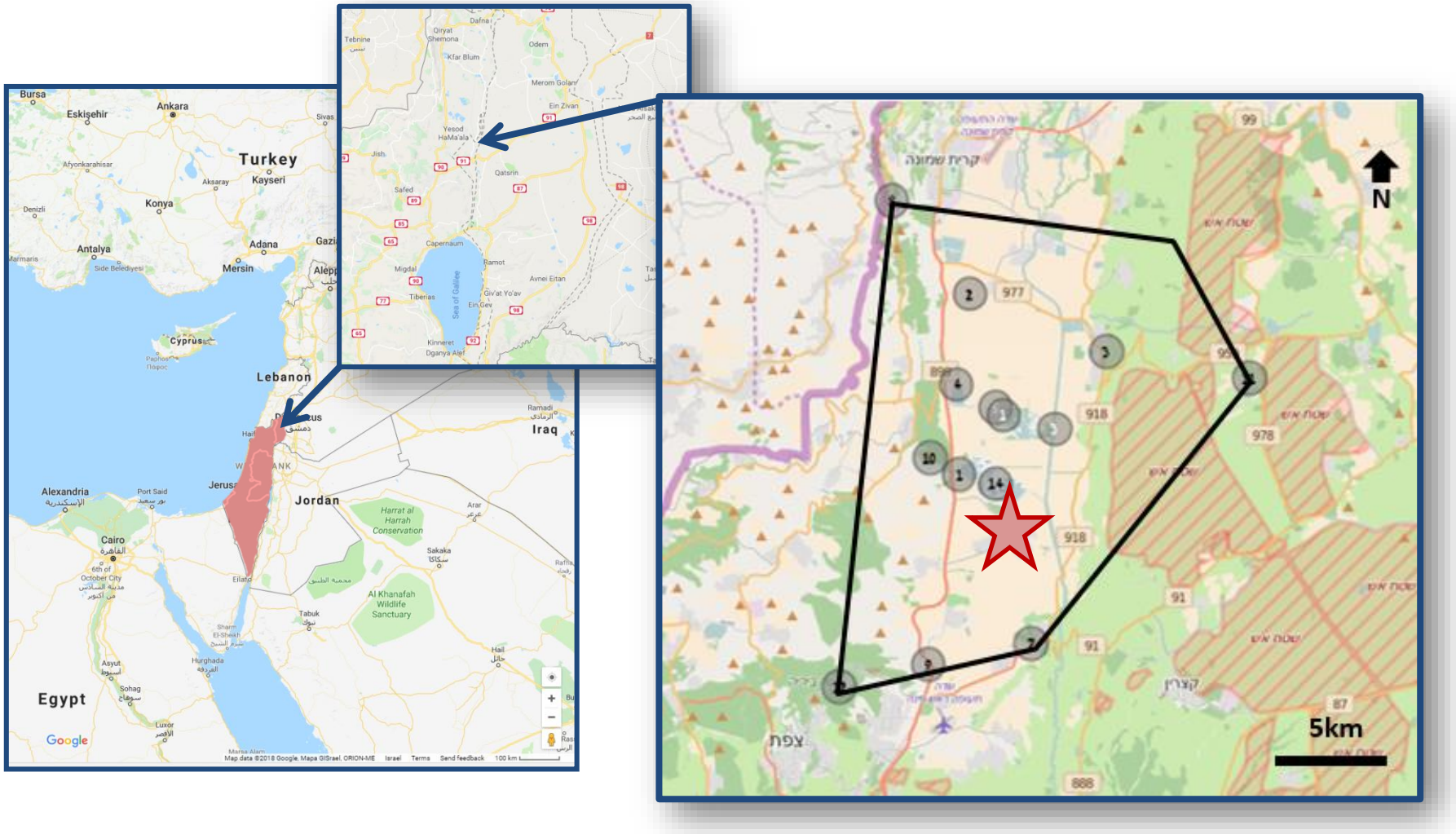
Ringing and data logging

- Identification ring
- Size (wing and tail length)
- Body mass



Tagging with ATLAS tags

Introduction - Research area



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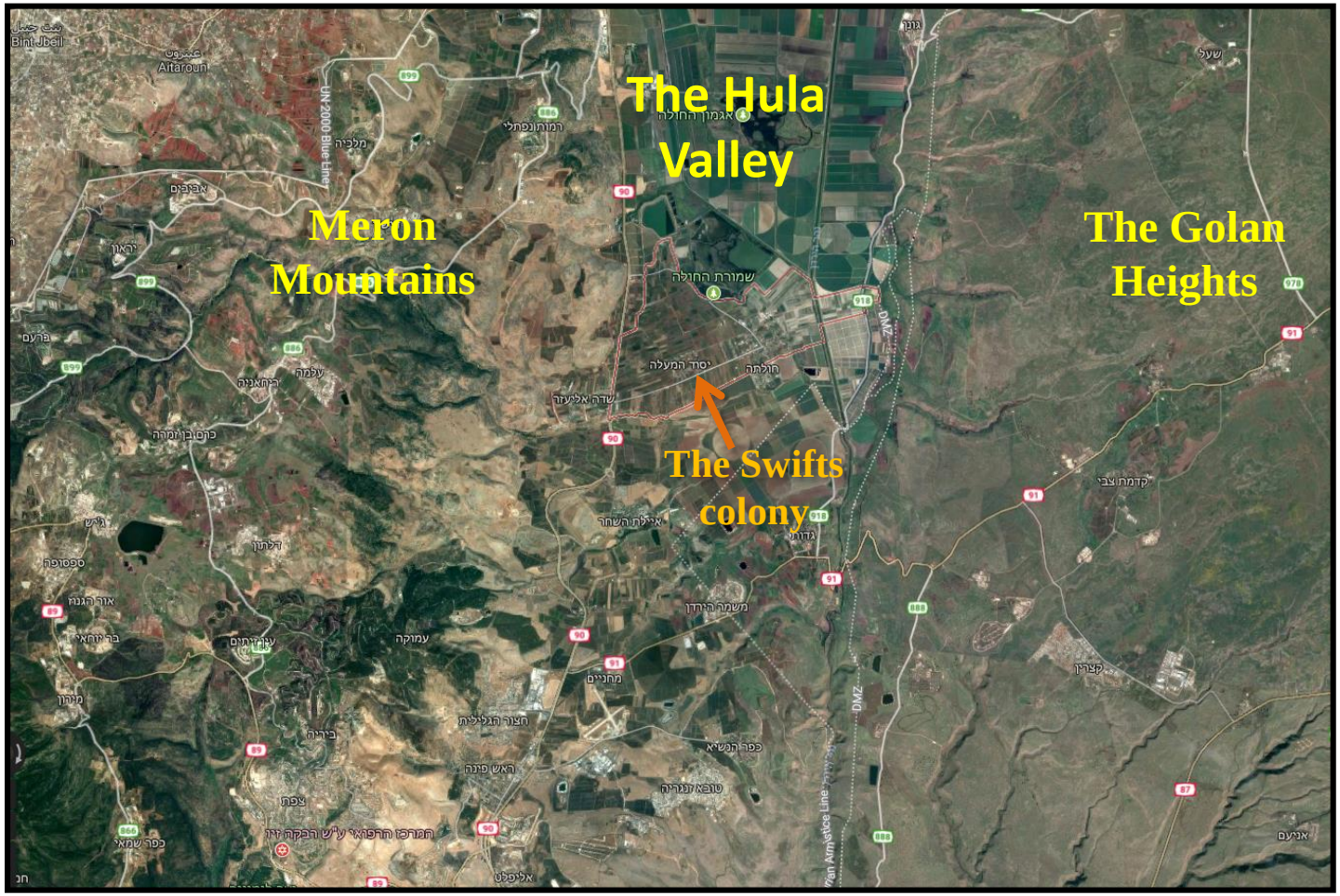
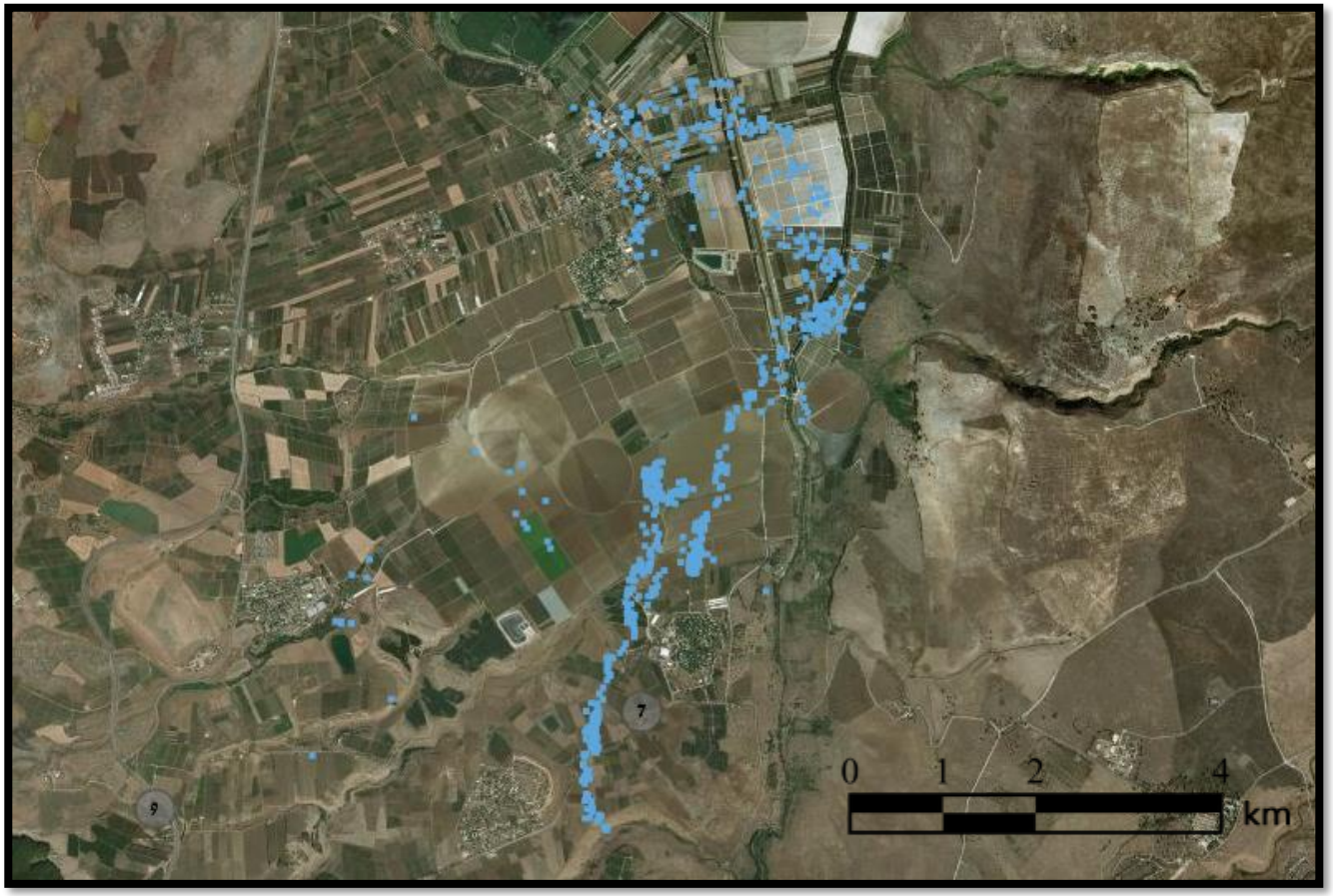
Results

The Swifts colony area

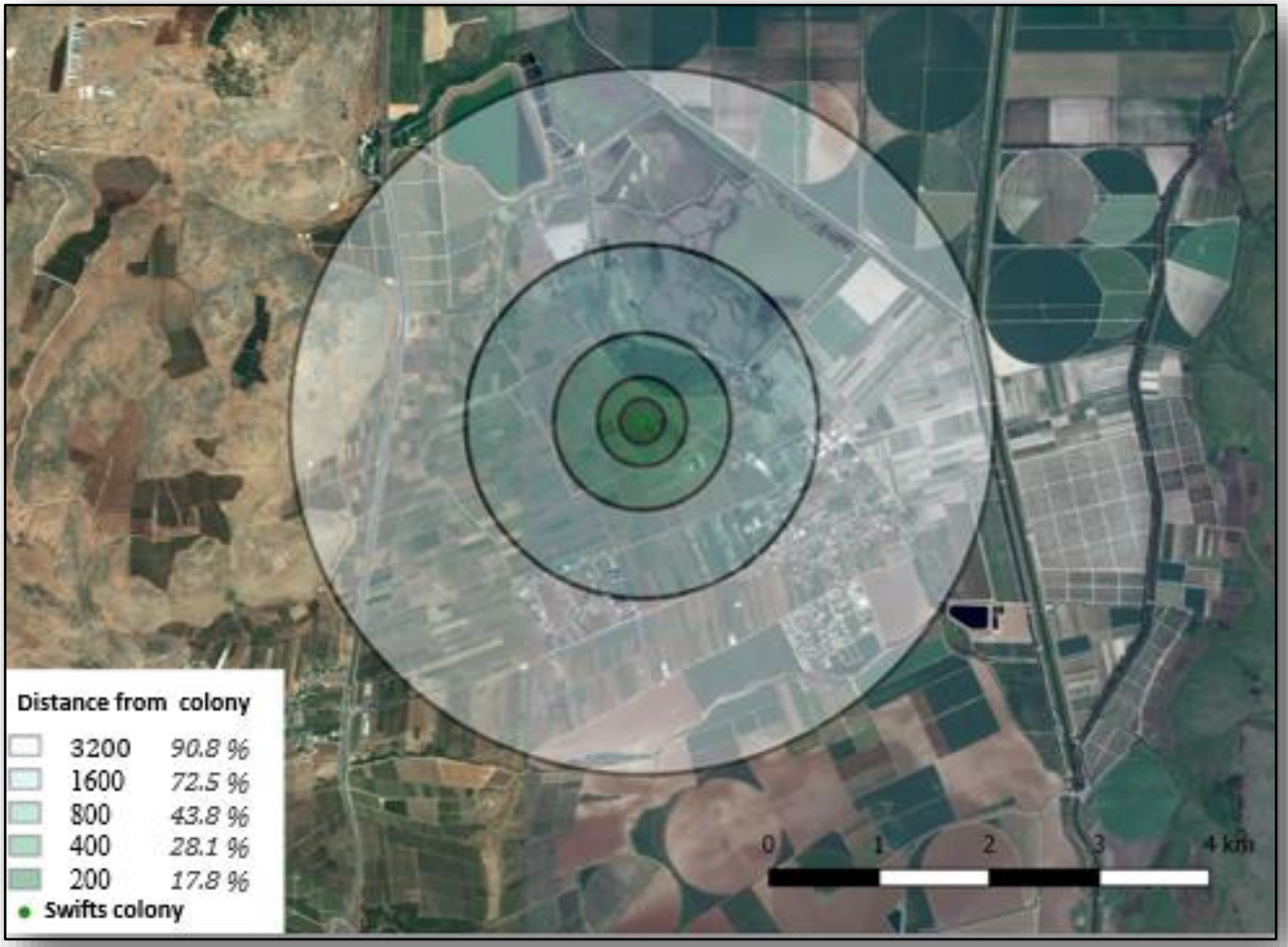


Results

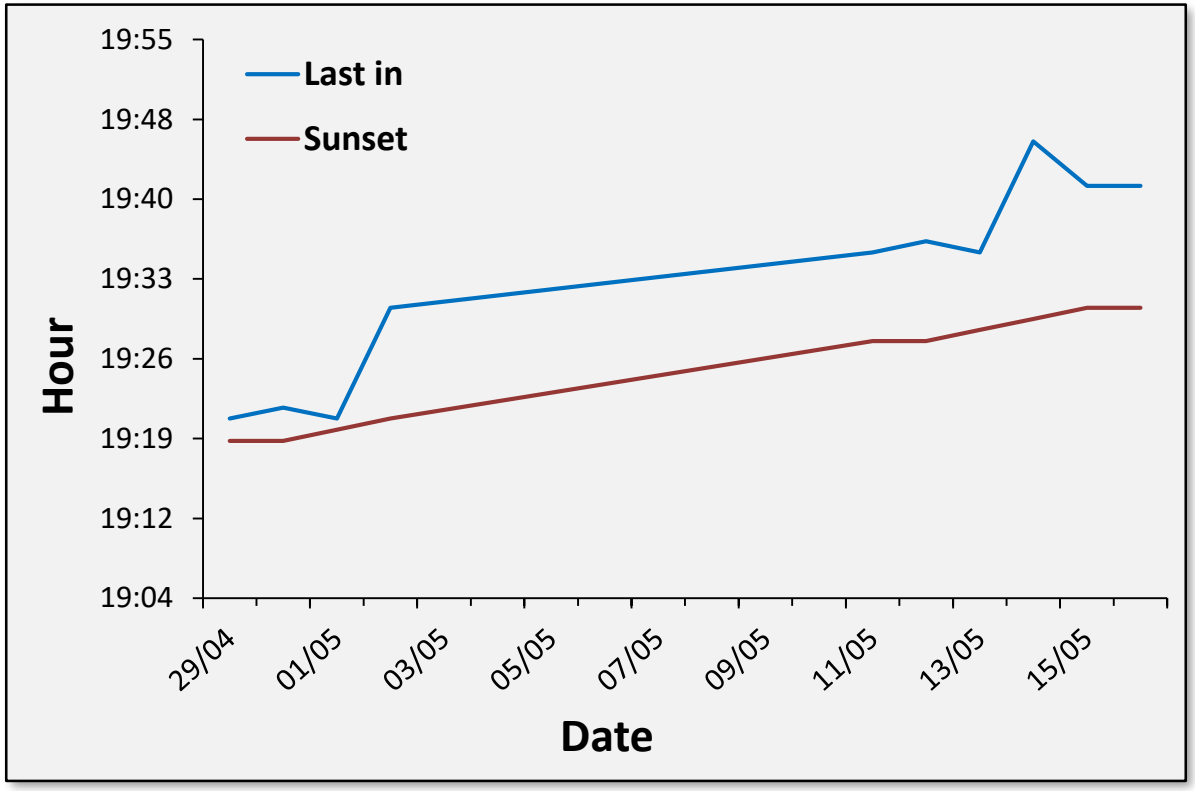
Movement of a single individual for 3 hours



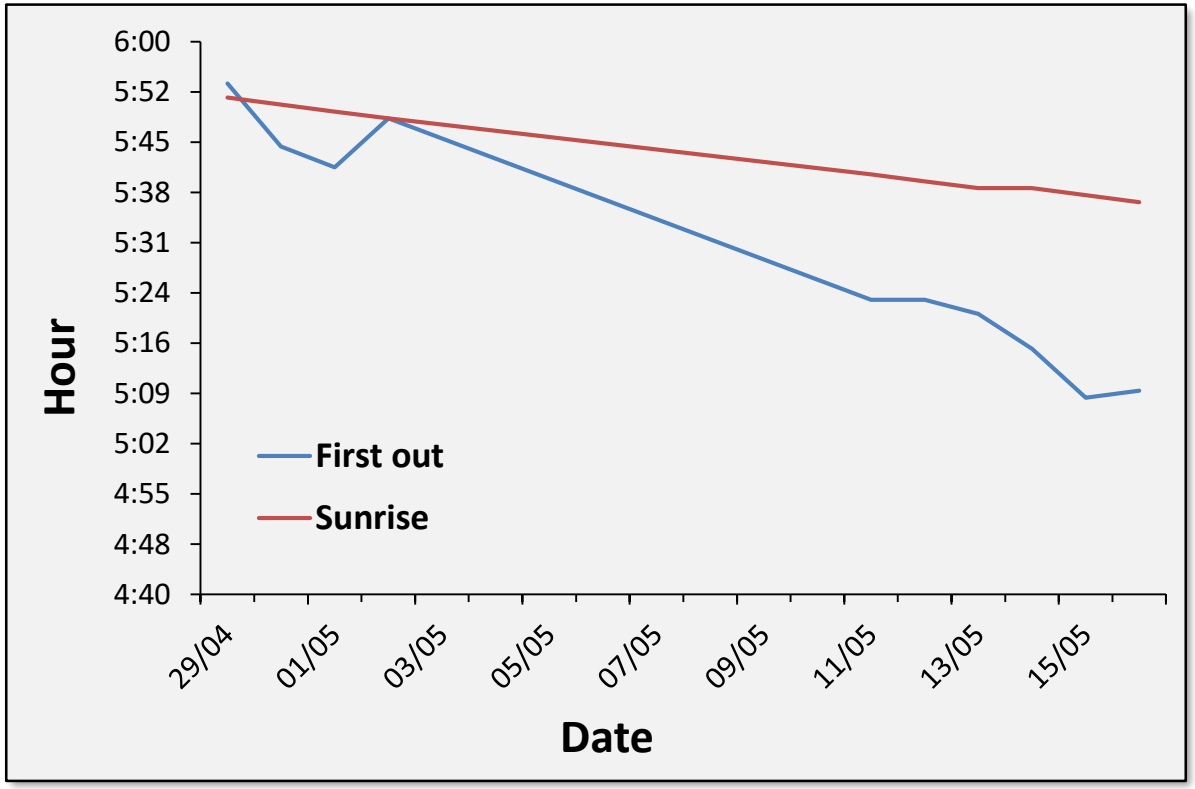
Results – Foraging range



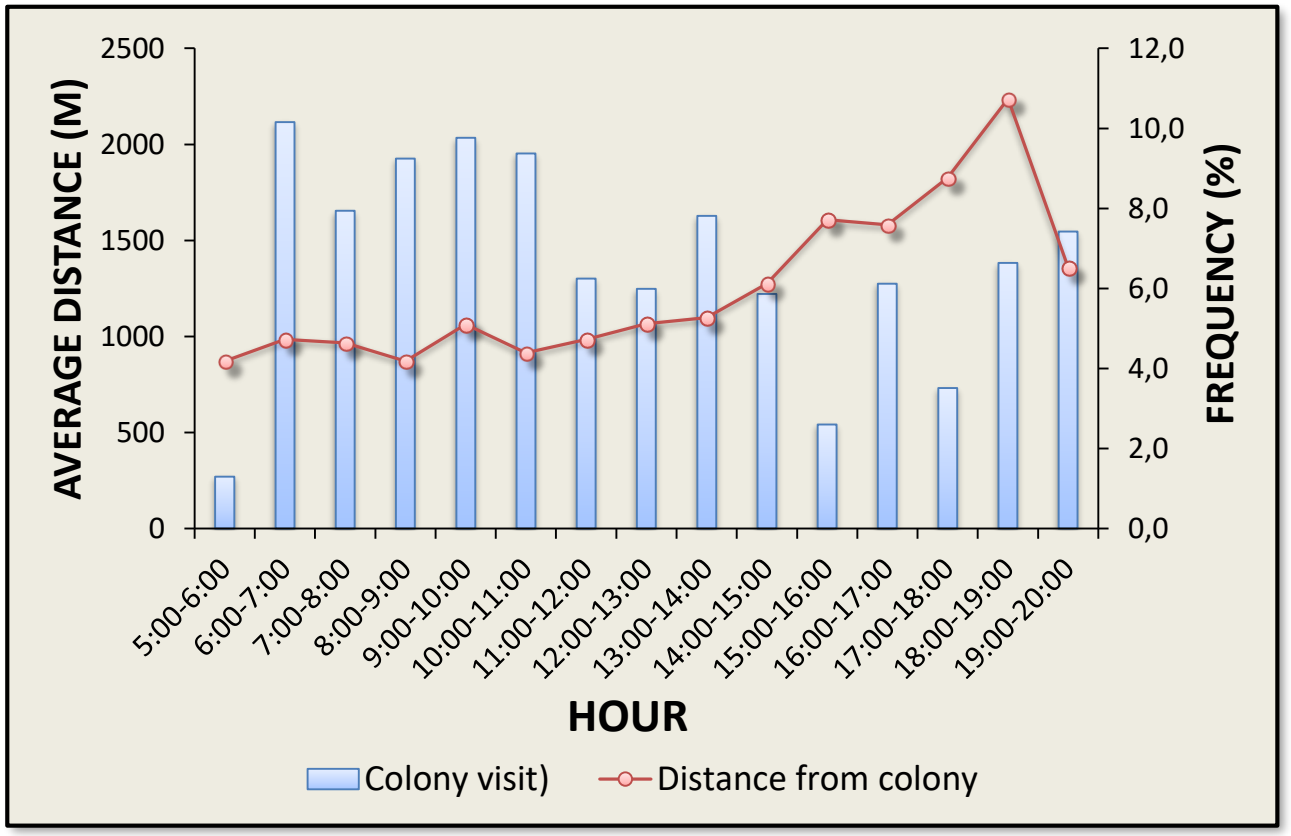
Results - Entrance to the colony



Results - Departure from the colony



Results - Visit frequency and foraging range



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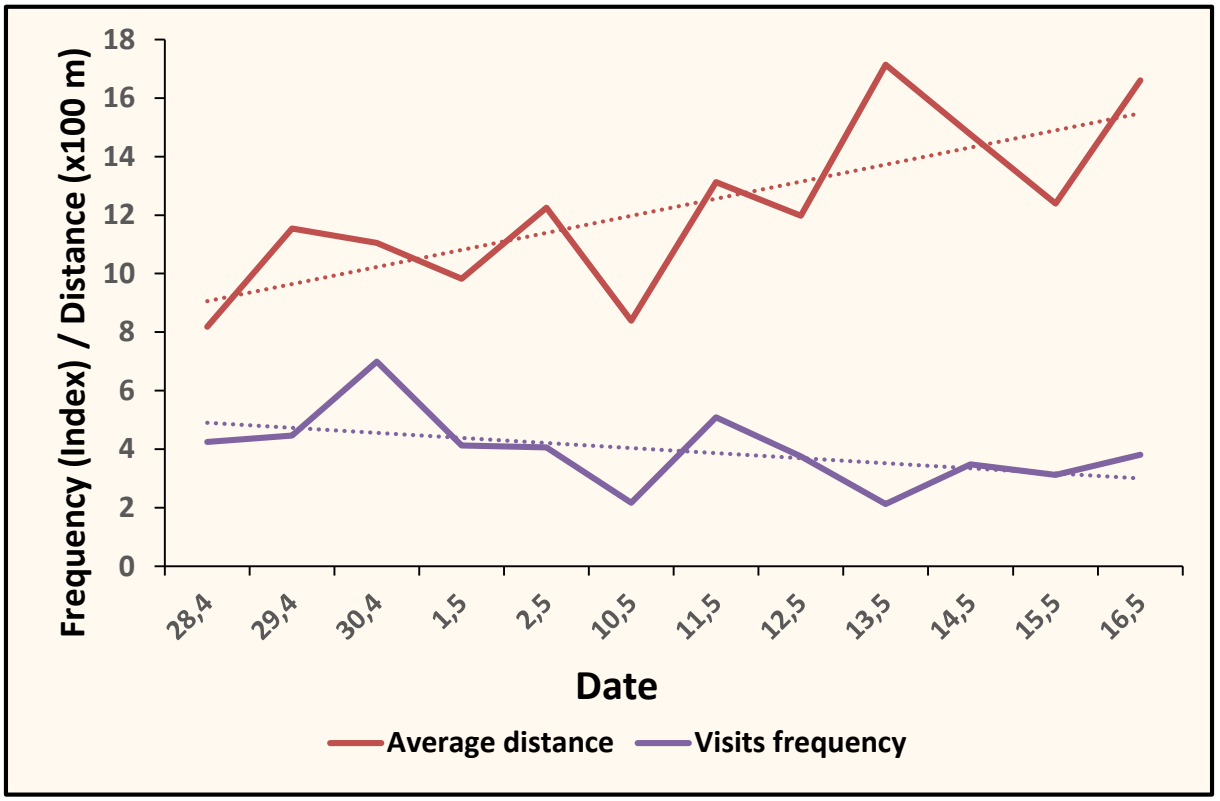

Hypothesis - Summary

The movement of Little Swifts and their nest visits will vary during the breeding season.

These changes will be reflected in:

- Frequency of nest visits – Decline observed
- Duration of stay in the nest during the night – Decline observed
- Foraging range – Increase observed

Questions ?!?